



**U.S. Department of the Interior
U.S. Geological Survey**

**RESULTS OF THE U.S. GEOLOGICAL SURVEY'S ANALYTICAL
EVALUATION PROGRAM FOR STANDARD REFERENCE SAMPLES
DISTRIBUTED IN MARCH 2003**

Open-File Report 03-261

**Results of the U.S. Geological Survey's Analytical
Evaluation Program for Standard Reference Samples
Distributed in March 2003**

By Mark T. Woodworth and Brooke F. Connor

U.S. GEOLOGICAL SURVEY

Open-File Report 03-261

**Lakewood, Colorado
2003**

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Definition of analytical methods, abbreviations, and symbols

Abbreviations and figure symbols		Analytical methods and codes	
Code	Method	Code	Method
C	Celsius	0	Other
Fσ	F-pseudosigma - nonparametric statistic for deviation	1	Atomic absorption: direct, air
HCl	hydrochloric acid	2	Atomic absorption: direct, nitrous oxide
Hg -	mercury sample	3	Atomic absorption: graphite furnace
HNO ₃	nitric acid	4	Inductively coupled plasma
Lh	lower hinge value	5	Direct current plasma
L	liter	6	Inductively coupled plasma/mass spectrometry
Lab	laboratory	7	Ion chromatography
mg/L	milligrams per liter	8	Atomic absorption: cold vapor
mL	milliliter	9	Atomic fluorescence
M -	major ion sample	10	Atomic absorption: extraction
MPV	most probable value (center line on graphs)	11	Atomic absorption: hydride
n	number of analyses	12	Flame emission
N	Normality	20	Titration: colorimetric
N -	nutrient sample	21	Titration: electrometric
NR	not rated, less than values reported or insufficient data	22	Colorimetric
OLR	overall laboratory rating for each sample type	40	Ion selective electrode
OWR	overall weighted rating for all sample types	41	Electrometric [pH and specific conductance]
P -	precipitation sample (low ionic-strength, typically <50 µS/cm)	50	Gravimetric
ppm	parts per million	51	Turbidimetric
SRS	USGS standard reference sample		
T -	trace metal sample		
Uh	upper hinge value		
USGS	United States Geological Survey		
V	number of rated analyses		
Z-value	number of F-pseudosigmas from the MPV		
µg/L	micrograms per liter		
µm	micrometer		
µS/cm	microsiemens per centimeter at 25° Celsius		
<	less than		
--	not reported		

Formulas	
MPV = median value (excluding less than values)	
F-pseudosigma (Fσ) = (Uh - Lh)/1.349	
Uh = median of the upper half of the reported values (excluding less than values)	
Lh = median of the lower half of the reported values (excluding less than values)	
Z-value = (reported value - MPV)/F-pseudosigma	
OLR = mean of all rated analytes for sample type	
OWR = $\frac{(OLR \cdot V_1) + (OLR \cdot V_2) + \dots + (OLR \cdot V_n)}{(V_1 + V_2 + \dots + V_n)}$ for each SRS type	

Ratings	
Rating	Absolute Z-value
4 (Excellent)	0.00 to 0.50
3 (Good)	0.51 to 1.00
2 (Satisfactory)	1.01 to 1.50
1 (Marginal)	1.51 to 2.00
0 (Unsatisfactory)	Greater than 2.00

RESULTS OF THE U.S. GEOLOGICAL SURVEY'S ANALYTICAL EVALUATION
PROGRAM FOR STANDARD REFERENCE SAMPLES DISTRIBUTED IN MARCH 2003

By Mark T. Woodworth and Brooke F. Connor

ABSTRACT

This report presents the results of the U.S. Geological Survey's analytical evaluation program for six standard reference samples -- T-173 (trace constituents), M-166 (major constituents), N-77 (nutrient constituents), N-78 (nutrient constituents), P-40 (low ionic-strength constituents), and Hg-36 (mercury) -- that were distributed in March 2003 to laboratories enrolled in the U.S. Geological Survey sponsored interlaboratory testing program. Analytical data received from 110 laboratories were evaluated with respect to overall laboratory performance and relative laboratory performance for each analyte in the six reference samples. Results of these evaluations are presented in tabular form. Also presented are tables and graphs summarizing the analytical data provided by each laboratory for each analyte in the six standard reference samples. The most probable value for each analyte was determined using nonparametric statistics.

INTRODUCTION

The U.S. Geological Survey (USGS) conducts an interlaboratory analytical evaluation program semiannually. This program provides a variety of standard reference samples (SRSSs) to accomplish quality assurance testing of laboratories and to provide an adequate supply of samples that contribute to quality control programs of participating laboratories. Natural-matrix reference materials are preferred for use in this interlaboratory evaluation program. A series of samples are prepared and distributed each spring and fall. The program began in 1962 with a single sample containing major constituents that was prepared from distilled water and reagent-grade chemicals. Twenty-three USGS laboratories participated in the first analytical evaluation program. Since that time, objectives of the program have been to:

- (1) evaluate and improve the performance of USGS and other participating laboratories;
- (2) provide a library of carefully prepared, homogeneous, stable, reference materials for use in the quality control programs of laboratories;
- (3) identify analytical problem areas;
- (4) identify quality assurance needs with respect to environmental analyses and develop new reference materials to meet these needs; and
- (5) evaluate the accuracy and precision of analytical methods.

Over 275 USGS and non-USGS laboratories are enrolled in the program, which can currently provide 5 different types of SRSSs:

1. Trace constituents.
2. Major constituents.
3. Nutrient constituents.
4. Low ionic-strength constituents.
5. Mercury.

Though this is not a laboratory certification program, participation in this continuing quality assurance program is mandatory for all laboratories providing water-quality data for USGS sponsored reports or storage in the USGS national databases. The results from this study can be used to alert participating laboratories of possible deficiencies in their analytical operations and provide reference materials for laboratory quality-control programs. Laboratories that provide data for the USGS are identified with a laboratory identification number while all other laboratories are kept confidential.

A supply of SRSs from previous evaluations is available. USGS offices and participating laboratories can purchase these SRSs for further testing, continuing quality assurance, and quality-control programs by contacting:

U.S. Geological Survey
Branch of Quality Systems
SRS Purchasing
Denver Federal Center, Bldg. 53
P. O. Box 25046, MS 401
Denver, Colorado 80225-0046
(303) 236-1875

This report summarizes the analytical results submitted by 110 laboratories for the March 2003 evaluation (table 1 and table 2). Analytical results for the following are presented in this report:

T-173	Trace constituents	N-78	Nutrient constituents
M-166	Major constituents	P-40	Low ionic-strength constituents
N-77	Nutrient constituents	Hg-36	Mercury

Laboratories that are providing analytical services to USGS offices are requested to analyze the appropriate SRSs for the same analytes requested by the USGS offices. All laboratories are requested to include the analytical methods used to determine the concentration of each analyte. When analytical method information was provided, it has been included in tables 11-16.

Not all SRSs are requested or necessarily analyzed by all the laboratories; nor do all laboratories enrolled in the program participate in each evaluation.

Table 1. USGS used laboratories that participated in the analyses of standard reference samples distributed in March 2003

Lab	Participating Laboratory	City	State
1	U.S. Geological Survey - National Water Quality Laboratory	Denver	CO
4	U.S. Geological Survey - Utah District Laboratory	Salt Lake City	UT
5	U.S. Bureau of Reclamation	Denver	CO
10	U.S. Bureau of Reclamation	Boise	ID
16	Oklahoma Department of Environmental Quality	Oklahoma City	OK
18	Illinois Environmental Protection Agency	Champaign	IL
21	UC Davis - Department of Environmental Science & Policy	Davis	CA
23	City of Fort Collins - Water Quality Laboratory	Ft. Collins	CO
25	Kentucky Geological Survey	Lexington	KY
31	High Sierra Water Laboratory	Truckee	CA
33	U.S. Geological Survey - Panola Mountain Watershed Project	Atlanta	GA
46	Wisconsin State Laboratory of Hygiene	Madison	WI
59	Division of Consolidated Laboratory Services	Richmond	VA
70	University of Iowa - Hygienic Laboratory	Des Moines	IA
72	New Jersey Department of Health	Trenton	NJ
89	Monroe County Environmental Health Laboratory	Rochester	NY
91	Georgia Department of Natural Resources	Atlanta	GA
102	Heidelberg College - Water Quality laboratory	Tiffin	OH
105	Pennsylvania Department of Environmental Protection	Harrisburg	PA
110	U.S. Geological Survey - New York District Laboratory	Troy	NY
121	University of Hawaii - Department of Oceanography	Honolulu	HI
134	Ocala Water Quality and Research Laboratory	Ocala	FL
142	North Dakota Department of Health	Bismarck	ND
147	U.S. Geological Survey - Surface Water Quality Research	Boulder	CO
180	Clean Water Services	Hillsboro	OR
193	Vermont Department of Environmental Conservation Laboratory	Waterbury	VT
205	Olsen's Agriculture Laboratory	McCook	NE
208	U.S. Geological Survey - Water Resources Division	San Diego	CA
212	Severn Trent Laboratories	Arvada	CO
219	U.S. Geological Survey - Minerals Program Laboratory	Denver	CO
220	U.S. Bureau of Reclamation	Bismarck	ND
224	University of Arkansas - Water Quality Laboratory	Fayetteville	AR
234	City of Wichita Laboratory	Wichita	KS
245	Frontier Geosciences Inc.	Seattle	WA
254	U.S. Geological Survey, WRD, NRP	Menlo Park	CA
323	Oregon Department of Environmental Quality	Portland	OR
327	North Carolina Department of Environment and Natural Resources	Raleigh	NC
330	Kennecott Environmental Laboratory	Magna	UT
333	U.S. Geological Survey - Colorado District WEBB Laboratory	Denver	CO
341	Michigan Department of Environmental Quality	Lansing	MI
356	Washington State Department of Ecology - Manchester Environmental Laboratory	Port Orchard	WA
366	TriMatrix Laboratory	Grand Rapids	MI
369	New Hampshire Department of Environmental Services	Concord	NH
373	City of Tulsa - Quality Assurance Laboratory	Tulsa	OK
374	U.S. Geological Survey - Miami Subdistrict Laboratory	Miami	FL
377	Environmental Task Force laboratory	Stevens Point	WI
378	Minnesota Department of Health	Minneapolis	MN
379	Mississippi Department of Environmental Quality Laboratory	Pearl	MS
380	New Mexico Health Department	Albuquerque	NM
381	North Atlantic Coastal Laboratory	Wellfleet	MA
383	University of Vermont - Agricultural & Environmental Testing Laboratory	Burlington	VT
386	Johnson County Environmental Laboratory	Mission	KS
388	Texas Commission on Environmental Quality	Houston	TX
390	University of Southern Mississippi - Department of Marine Science	Stennis Space Center	MS

Table 2. Other laboratory participants in the analyses of standard reference samples distributed in March 2003

Participating Laboratory	City	State
Albion Environmental	College Station	TX
Aqua Tech Environmental Laboratory (ATEL)	Marion	OH
California Department of Water Resources	West Sacramento	CA
City of Northglenn - Water Treatment Facility	Northglenn	CO
City of Albuquerque - Water Quality Laboratory	Albuquerque	NM
City of Pueblo - Wastewater Treatment Plant	Pueblo	CO
City of Tallahassee - Water Quality Division	Tallahassee	FL
City of Westminster - Semper Water Quality Laboratory	Westminster	CO
Columbia Analytical Services	Rochester	NY
Cook Inlet Community-Based Water Quality Laboratory	Homer	AK
Darrin Freshwater Institute	Bolton Landing	NY
Denver Water Department	Denver	CO
Fairfax County Environmental Services	Lorton	VA
Florida Department of Environmental Protection	Tallahassee	FL
Huffman Laboratories	Golden	CO
Institute of Ecosystem Studies	Millbrook	NY
J.G. Environmental, Inc.	Kershaw	SC
Kansas Geological Survey	Lawrence	KS
Lower Colorado River Authority	Austin	TX
Madison Public Health Laboratory	Madison	WI
Maryland Department of Health and Mental Hygiene	Baltimore	MD
Metro Wastewater Reclamation District	Denver	CO
Montana Bureau of Mines & Geology	Butte	MT
Old Dominion University - Applied Marine Research Laboratory	Norfolk	VA
Ouachita Baptist University - Department of Biology	Arkadelphia	AR
Rensselaer Polytechnic Institute - Tech Water Research Laboratory	Troy	NY
Severn Trent Laboratories	Tallahassee	FL
South Florida Water Management District	West Palm Beach	FL
Southwest Florida Water Management District	Brooksville	FL
Suffolk County Water Authority Laboratory	Hauppauge	NY
Trace Element Research Laboratory	College Station	TX
U.S. Bureau of Reclamation	Alamosa	CO
U.S. Bureau of Reclamation	Boulder City	NV
U.S. Department of Agriculture - Cooperative Chemical Analytical Laboratory	Corvallis	OR
U.S. Department of Agriculture - Forest Service	Ft. Collins	CO
U.S. Geological Survey Geologic Division - Energy Analytical Laboratory	Denver	CO
University of Georgia - Soil, Plant, & Water Laboratory	Athens	GA
University of Maryland - Chesapeake Biological Laboratory	Solomons	MD
University of Maryland - Horn Point Laboratory	Cambridge	MD
UZ HydroChemistry Laboratory	Denver	CO
Virginia Tech - Occoquan Watershed Monitoring Laboratory	Manassas	VA
West Coast Analytical Service, Inc.	Santa Fe Springs	CA
WMRC - Hazardous Waste Research Center	Champaign	IL
Wyoming Department of Agriculture	Laramie	WY

Table 2. Other laboratory participants in the analyses of standard reference samples distributed in March 2003 -- continued

Middle East Participating Laboratory	Location
Bethlehem University - Water & Soil Environmental Research Unit	Bethlehem
Birzeit University - Center for Environ. & Occupational Health Sciences	Ramallah
Geological Survey of Israel Laboratory	Jerusalem
Israeli Hydrologic Service Laboratory	Beit-Dagan
Mekorot Laboratory	Eylat
Mekorot Laboratory	Ashqelon
Mekorot Laboratory, Rosh-Haayn Laboratory	Ramla
Mekorot Water Co. Ltd. Central Lab	Nazareth Illit
Palestinian Water Authority	Al-Beireh
Public Health Laboratory	Tel Aviv
Public Health Laboratory - Ministry of Health	Beer Sheva
Water Authority of Jordan	Amman

PREPARATION OF STANDARD REFERENCE SAMPLES

All of the SRSs used in this evaluation were prepared by USGS personnel located in Lakewood, Colorado, and were analyzed for analyte concentrations and physical property values before mailing. A supply of these SRSs is maintained and is available to purchase by participating laboratories and USGS offices for use in their quality-control programs.

Trace constituents sample T-173 was prepared using water collected from Clear Creek east of Blackhawk, Colorado. The water was pumped through a 0.2- and 0.1-micrometer (μm) filter into a 1325-liter (L) polypropylene drum. The water was continuously circulated and passed through a 0.1- μm filter and ultraviolet sterilizer for 24 hours. The water was then acidified to a pH <2 with nitric acid (HNO_3) and chlorinated to 5 parts per million (ppm) free chlorine with sodium hypochlorite. Some trace constituent concentrations were adjusted by adding reagent-grade chemicals. The sample was circulated through a 0.1- μm filter and an ultraviolet sterilizer for an additional 24 hours prior and during bottling. The 500-milliliter (mL) polypropylene bottles and caps were acid leached with 0.16N HNO_3 , deionized-water rinsed, and autoclave sterilized.

Major constituents sample M-166 was prepared using water collected from Clear Creek west of Idaho Springs, Colorado. The water was pumped through a 0.2- and 0.1- μm filter into a 1325-L polypropylene drum. The water was continuously circulated and passed through a 0.1- μm filter and ultraviolet sterilizer for 24 hours. The water was then chlorinated to 5-ppm free chlorine with sodium hypochlorite. Some major constituent concentrations were adjusted by adding reagent-grade chemicals. The sample was circulated an additional 24 hours, then allowed to sit for 48 hours. During bottling, the sample was pumped through an ultraviolet sterilizer and a 0.1- μm filter. The 500-mL polypropylene bottles and caps were acid leached with 0.16N HNO_3 , deionized-water rinsed, and autoclave sterilized.

Nutrient constituents sample N-77 was prepared in a 50-L polypropylene carboy using deionized water. This SRS was prepared the week prior to sample distribution. The water was circulated through a 0.1- μm filter and kept chilled with ice (12 degrees Celsius) during the entire preparation procedure. Ultraviolet sterilization was performed until the addition of reagent-grade chemicals. The 60-mL amber glass vials and teflon-faced rubber-lined caps were acid leached with 0.1N hydrochloric acid (HCl), deionized-water rinsed, and autoclave sterilized.

Nutrient constituents sample N-78 was prepared in a 190-L polypropylene drum using water collected from Bear Creek east of Kittredge, Colorado. This SRS was prepared the week prior to sample distribution. The water was circulated through a 0.1- μm filter and kept chilled with ice (12 degrees Celsius) during the entire preparation procedure. Ultraviolet sterilization was performed until the addition of reagent-grade chemicals. The 250-mL polyethylene bottles were acid leached with 0.1N HCl, deionized-water rinsed, and autoclave sterilized.

Low ionic-strength constituents sample P-40 was prepared in a 600-L polypropylene drum with snow collected north of Loveland Valley Ski Area, Colorado. The desired phosphate and fluoride concentrations were obtained by adding reagent-grade chemicals. Prior and during bottling, the sample was circulated through a 0.1- μm filter and an ultraviolet sterilizer. The 500-mL polypropylene bottles and caps were acid leached with 0.16N HNO_3 , deionized-water rinsed, and autoclave sterilized.

Mercury sample Hg-36 was prepared using deionized water. The sample was prepared in a 45-L glass carboy. It was preserved with 5 mL/L of 12 N HCl. The desired mercury concentration was obtained by adding a mercury standard solution. The 250-mL borsilicate glass bottles and teflon-lined caps were new, acid leached, and deionized-water rinsed.

LABORATORY ANALYSES

The participating laboratories were asked to determine constituents that are summarized in table 3. The number of analytes range from 1 in Hg-36 (mercury) to 28 in T-173 (trace constituents).

Table 3. Analytes determined in standard reference samples distributed in March 2003

[mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Constituent or Property	Units	T-173	M-166	N-77	N-78	P-40	Hg-36
Acidity	Acidity as CaCO ₃	mg/L				X	
Alk	Alkalinity as CaCO ₃	mg/L		X			
Ag	Silver	µg/L	X				
Al	Aluminum	µg/L	X				
As	Arsenic	µg/L	X				
B	Boron	µg/L	X	X			
Ba	Barium	µg/L	X				
Be	Beryllium	µg/L	X				
Ca	Calcium	mg/L	X	X			
Cd	Cadmium	µg/L	X			X	
Cl	Chloride	mg/L		X		X	
Co	Cobalt	µg/L	X				
Cr	Chromium	µg/L	X				
Cu	Copper	µg/L	X				
ROE	Dissolved Solids	mg/L		X			
F	Fluoride	mg/L		X		X	
Fe	Iron	µg/L	X				
Hg	Mercury	µg/L					X
K	Potassium	mg/L	X	X		X	
Li	Lithium	µg/L	X				
Mg	Magnesium	mg/L	X	X			
Mn	Manganese	µg/L	X				
Mo	Molybdenum	µg/L	X				
Na	Sodium	mg/L	X	X			
NH ₃ as N	Ammonia	mg/L			X	X	
NH ₃ + Org N as N	Ammonia + Organic N	mg/L			X	X	
Ni	Nickel	µg/L	X				
NO ₃ as N	Nitrate	mg/L			X	X	
Pb	Lead	µg/L	X				
pH	pH	unit		X			
PO ₄ as P	Orthophosphate	mg/L			X	X	X
total P as P	Phosphorus	mg/L		X	X	X	
Sb	Antimony	µg/L	X				
Se	Selenium	µg/L	X				
SiO ₂	Silica	mg/L	X	X			
SO ₄	Sulfate	mg/L		X			
Sp Cond	Specific Conductance	µS/cm		X			
Sr	Strontium	µg/L	X	X			
Tl	Thallium	µg/L	X				
U	Uranium	µg/L	X				
V	Vanadium	µg/L	X	X			
Zn	Zinc	µg/L	X				

Laboratories were requested to identify the method used for each constituent according to analytical method codes in the list of definitions, abbreviations, and symbols (page iv).

Participating laboratories were also asked to identify the method used, such as those references listed below.

1. American Public Health Association, American Water Works Association, and Water Environment Federation, 1995, Standard methods for the examination of water and wastewater (19th ed.): Washington, D.C., American Public Health Association, variable pagination.
2. American Society for Testing and Materials, 1995, Annual book of ASTM standards: Philadelphia, v. 11.0, and v. 11.02.3.
3. Kopp, J.F., and McKee, G.F., 1979, Methods for chemical analysis of water and wastes: Cincinnati, U.S. Environmental Protection Agency, EPA 600/4-79-020, rev. 1983, 460 p.
4. Fishman, M.J., and Friedman, L.C., eds., 1989. Methods for determination of inorganic substances in water and fluvial sediments (3rd ed.): U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A1, 545 p.
5. Miscellaneous manufacturer's instrument manuals or references.

STATISTICAL PRESENTATION OF DATA

Data in this report are evaluated using nonparametric statistics as described by Hoaglin and others (1983). This statistical approach is a resistant statistic because outliers have less influence on the median, than on the mean in traditional parametric statistics. Analytical data for each analyte are presented in tabular and graphical forms in tables 11 - 16. Tabulated data for each analyte include the laboratory identification number; reported values; analytical method; most probable value (MPV); number of reported analyses, excluding less than values, (n); data range; the F-pseudosigma; and the Z-value. The Z-value is equivalent to the Z-score of traditional statistics. The F-pseudosigma approximates the standard deviation (σ) of traditional statistics when the data has a Gaussian distribution.

The median value, calculated from the reported results, is the MPV. The F-pseudosigma is calculated by dividing the fourth-spread (analogous to interquartile range) by 1.349; therefore the smaller the F-pseudosigma the more precise the determinations. The 1.349 value is derived from the number of standard deviations that encompasses 50% of the data. Statistical tables show that 25% of the area under a normal curve lies 0.6745σ from the mean, so 50% lies 1.349σ . The MPV and F-pseudosigma are replaced with the term "inadequate data" when the overall number of analyses is less than seven or the calculated F-pseudosigma is greater than the MPV. However, if an analyte has at least five analyses by a given method, the median and F-pseudosigma are reported in the block of data listed for each method. Based on an assessment of analyte data (Keith Long, Branch of Quality Systems, verbal comm., 1998), when the F-pseudosigma is less than 5 percent of the MPV, the rating criterion is set to 5 percent of the MPV. When applicable, the rating criterion is shown in tables 5 - 17.

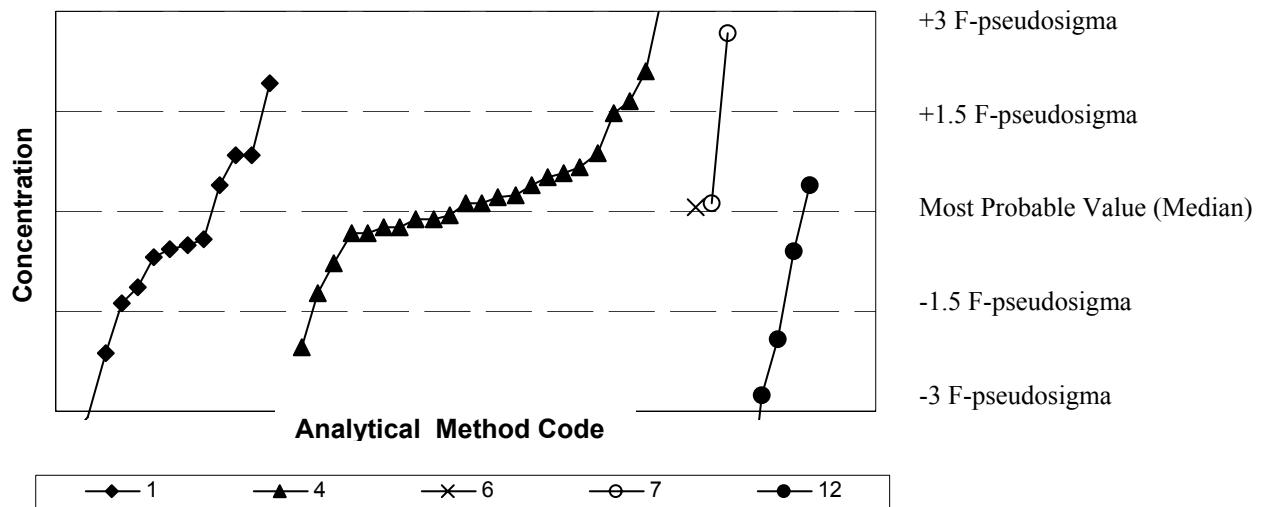
A graphical plot of the reported data is shown in figure 1. The upper and lower boundaries of the graphical plots are +3 and -3 F-pseudosigma deviations from the median. Reported values are grouped by analytical method in ascending order of value.

LABORATORY PERFORMANCE RATINGS

To facilitate laboratory intercomparison, laboratory performance ratings are included in tables 4 - 16 in this report. For each SRS, averages of all the analyte ratings and the number of rated analyses are given for each participating laboratory. The actual reported values by all the laboratories were used to calculate the statistical results and performance ratings presented in this report. Laboratory determination of each analyte is rated on a scale 4 to 0, based on the absolute Z-value. The listing of ratings and Z-values are presented in the list of analytical methods, abbreviations, and symbols given on page iv and in tables 5 - 10.

Laboratories reporting less-than values are not performance rated unless their less-than value is less than the MPV (known as false negative) and has a Z-value greater than 2. In this case, the laboratory would receive a rating of 0 for that analyte.

Ratings are based on the relative performance of laboratories on specific samples and should be reviewed and evaluated on a case-by-case basis for each laboratory considering such factors as methods used and data needs of specific USGS projects using the laboratory data.



NOTE: vertical scale is the concentration value of the individual analyte in appropriate units (see table 3). Horizontal scale is the laboratory reported values separated by method (different symbols) and plotted by increasing values. Numbers next to each symbol at the bottom of the figure are analytical method codes as described on page iv. Laboratory-reported results outside ± 3 F-pseudosigma from the median are not shown on the graphs.

Figure 1. Statistical parameters shown on data graphs in tables 11-16

REFERENCE

Hoaglin, D.C., Mosteller, F., and Tukey, J.W., Eds. 1983, Understanding robust and exploratory data analysis: New York, NY, John Wiley, Inc., p. 38-41.

Table 4. Overall laboratory performance ratings for standard reference samples distributed March 2003

[SRS, standard reference sample; Lab, laboratory identification number; OWR, overall weighted rating for all sample types; OLR, overall laboratory rating for sample type; V/66, number of rated analyses out of 66 from all sample types; V/28, V/16, V/5, V/5, V/11, and V/1 are number of rated analyses for each sample type (T-173, M-166, N-77, N-78, P-40, HG-36) respectively; NR, not rated; --, not reported.]

SRS			T-173		M-166		N-77		N-78		P-40		HG-36	
Lab	OWR	V/66	OLR	V/28	OLR	V/16	OLR	V/5	OLR	V/5	OLR	V/11	OLR	V/1
1	3.3	63	3.3	28	3.3	15	3.6	5	3.8	5	2.8	9	3.0	1
2	3.5	8	--	--	--	--	--	--	--	--	3.5	8	--	--
4	3.7	3			3.7	3			--	--			--	--
5	2.8	56	2.9	21	3.3	16	1.2	5	2.6	5	2.7	9	--	--
7	2.6	24	2.6	24	--	--	--	--	--	--	--	--	--	--
8	2.5	58	2.8	27	2.7	14	2.0	4	0.4	5	2.5	8	--	--
10	3.3	31	2.8	9	3.6	12	3.4	5	3.2	5			--	--
12	2.7	22	2.7	13	2.7	9			--	--			--	--
16	2.8	50	2.8	25	2.7	15	2.8	5	3.2	5			--	--
18	1.7	35	1.3	16	2.2	14			1.5	4			2.0	1
21	3.3	6	0.0	1	--	--	4.0	5	--	--			--	--
23	2.5	44	2.0	20	3.8	6	3.3	4	1.6	5	3.1	9	--	--
24	3.5	24	3.1	11	3.8	13			--	--			--	--
25	2.6	39	2.8	16	2.7	15			--	--	2.0	8	--	--
26	0.0	3			--	--			0.0	3			--	--
30	2.9	19	2.3	8	3.4	9			3.5	2			--	--
31	4.0	5			--	--	4.0	5	--	--			--	--
32	3.3	45	3.3	28	3.4	16			--	--			0.0	1
33	1.7	40	1.2	9	1.7	13	0.5	4	2.3	4	2.3	10	--	--
38	3.3	26			3.4	9	3.6	5	2.8	5	3.4	7	--	--
42	2.5	48	2.4	27	2.6	15	2.3	3	3.3	3			--	--
45	2.9	58	3.0	26	2.7	15	1.3	3	4.0	3	3.4	10	3.0	1
46	3.4	42	3.5	11	3.7	12	3.5	4	2.2	5	3.3	9	4.0	1
50	3.3	44	3.4	27	3.1	13	3.0	2	4.0	2			--	--
51	3.4	5			--	--	3.4	5	--	--			--	--
59	3.2	57	3.2	25	3.3	15	3.2	5	3.0	5	3.2	6	4.0	1
64	3.5	32	4.0	5	3.6	10	3.8	4	3.0	4	3.1	9	--	--
70	3.0	49	2.9	24	3.2	15	3.2	5	2.8	5			--	--
72	1.4	10			--	--	0.6	5	2.2	5			--	--
76	3.9	31	3.9	18	3.8	10	4.0	1	4.0	2			--	--
80	2.5	16			3.0	10	1.3	3	2.0	3			--	--
86	3.2	36	3.2	15	3.7	9	2.0	3	2.3	4	3.8	5	--	--
89	2.4	27	2.0	4	3.0	7	2.4	5	2.2	5	2.0	6	--	--
90	2.3	6			--	--	2.7	3	2.0	3			--	--
91	2.2	11			3.8	4	2.0	3	0.8	4			--	--
97	2.2	20	2.2	20	--	--			--	--			--	--
100	2.6	38	2.5	23	2.9	15			--	--			--	--
102	2.4	21			2.3	11	2.0	5	3.2	5			--	--
105	2.4	51	2.3	19	2.6	14	1.8	4	3.0	5	2.2	9	NR	0
110	3.3	16	3.2	6	--	--	3.5	2	--	--	3.3	8	--	--
113	3.1	51	2.3	19	3.5	14	2.8	5	4.0	5	3.6	8	--	--
118	3.6	14			3.5	4	3.4	5	3.8	5			--	--
121	4.0	1			4.0	1			--	--			--	--
134	3.7	62	3.6	27	3.9	16	2.8	4	3.8	5	3.9	10	--	--
138	3.4	62	3.0	25	3.3	16	3.8	5	4.0	5	3.6	10	4.0	1
142	3.1	53	3.3	27	3.1	16	3.4	5	2.0	5			--	--
146	2.0	41	1.9	20	2.5	12	1.3	4	1.8	5			--	--
147	4.0	6	4.0	6	--	--			--	--			--	--
149	3.1	30	2.9	22	3.6	8			--	--			--	--
180	2.9	53	2.6	22	3.4	11	3.0	5	3.2	5	3.0	9	0.0	1

Table 4. Overall laboratory performance ratings for standard reference samples distributed March 2003

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[SRS, standard reference sample; Lab, laboratory identification number; OWR, overall weighted rating for all sample types; OLR, overall laboratory rating for sample type; V/66, number of rated analyses out of 66 from all sample types; V/28, V/16, V/5, V/5, V/11, and V/1 are number of rated analyses for each sample type (T-173, M-166, N-77, N-78, P-40, HG-36) respectively; NR, not rated; --, not reported.]

SRS		T-173		M-166		N-77		N-78		P-40		HG-36		
Lab	OWR	V/66	OLR	V/28	OLR	V/16	OLR	V/5	OLR	V/5	OLR	V/11	OLR	V/1
183	2.5	17	1.9	7	2.8	8			3.5	2			0.0	1
190	3.0	52	2.9	18	2.9	14	3.0	5	4.0	5	2.7	10	--	--
193	2.6	31	2.1	7	2.8	9	2.8	4	2.5	4	2.9	7	--	--
198	2.9	8			--	--	3.0	4	2.8	4			--	--
205	0.0	2			--	--			0.0	2			--	--
208	3.0	5			4.0	2			2.0	2	3.0	1	--	--
212	2.6	49	2.9	28	2.6	16			0.8	5			--	--
219	2.9	37	3.1	26	2.5	11			--	--			--	--
220	2.8	26	2.9	11	2.6	10			2.8	5			--	--
224	2.6	9			2.6	9			--	--			--	--
227	3.4	18	3.2	5	3.6	8			3.4	5			--	--
230	2.9	41	2.7	27	3.3	14			--	--			--	--
234	3.0	49	3.0	25	3.4	16	3.0	4	2.0	4			--	--
235	2.9	29	2.9	28	--	--			--	--			--	--
245	2.0	1			--	--			--	--			3.0	1
247	2.0	46	2.8	10	2.7	16	0.8	5	2.8	5	2.3	10	2.0	1
254	4.0	2			4.0	2			--	--			NR	0
256	2.4	32	1.9	18	3.0	14			--	--			--	--
259	3.5	34	3.3	19	3.8	15			--	--			--	--
263	3.3	9			3.3	9			--	--			--	--
265	3.2	46	3.2	28	3.6	11			--	--	2.7	7	--	--
266	3.8	12			3.8	12			--	--			--	--
269	3.8	5			3.8	5			--	--			--	--
273	2.4	38	2.3	14	2.6	13			--	--	2.3	11	--	--
274	1.4	27	1.0	5	1.1	12			--	--	1.9	10	--	--
276	3.2	6			3.2	6			--	--			--	--
277	2.3	28	2.0	13	2.5	10			--	--	2.8	5	--	--
279	3.5	12	3.8	4	3.8	4			--	--	3.0	4	--	--
301	1.1	10			0.4	5			--	--	1.8	5	--	--
304	3.5	22	3.5	21	--	--			--	--			--	--
307	2.6	19	2.3	10	3.2	6			2.7	3			3.0	1
313	3.1	10			--	--	3.6	5	2.6	5			--	--
316	3.8	5			--	--	3.8	5	--	--			--	--
318	3.2	5			--	--	3.2	5	--	--			--	--
319	2.0	2			2.0	2			--	--			--	--
320	3.6	8			--	--	3.6	5	3.7	3			--	--
321	2.8	17			2.9	7	2.5	4	--	--	3.0	6	--	--
323	3.0	61	3.2	27	3.4	16	0.8	5	2.0	4	3.4	9	--	--
326	2.9	30	2.5	16	3.8	8			--	--	2.7	6	--	--
327	2.1	16	2.0	2	1.5	6	3.0	2	3.3	3	1.3	3	--	--
328	2.0	64	2.3	28	2.3	16	0.4	5	2.5	4	1.7	11	--	--
330	3.2	25	3.2	20	3.2	5			--	--			--	--
333	3.8	16			3.6	5	4.0	2	--	--	3.8	9	--	--
341	2.9	24			3.1	14	2.4	5	3.0	5			--	--
356	3.3	37	3.1	26	3.7	6			3.8	4			--	--
366	2.8	21			3.5	11	1.0	5	3.2	5			4.0	1
369	2.8	5			--	--	2.8	5	--	--			--	--
373	2.9	9			--	--	2.0	4	3.6	5			--	--
374	4.0	1			4.0	1			--	--			--	--
377	3.4	21			3.7	16	2.6	5	--	--			--	--

Table 4. Overall laboratory performance ratings for standard reference samples distributed March 2003**-- continued**

[SRS, standard reference sample; Lab, laboratory identification number; OWR, overall weighted rating for all sample types; OLR, overall laboratory rating for sample type; V/66, number of rated analyses out of 66 from all sample types; V/28, V/16, V/5, V/5, V/11, and V/1 are number of rated analyses for each sample type (T-173, M-166, N-77, N-78, P-40, HG-36) respectively; NR, not rated; --, not reported.]

SRS			T-173		M-166		N-77		N-78		P-40		HG-36	
Lab	OWR	V/66	OLR	V/28	OLR	V/16	OLR	V/5	OLR	V/5	OLR	V/11	OLR	V/1
378	3.3	10			--	--	3.8	5	2.8	5			--	--
379	1.9	48	1.4	17	2.3	12	2.6	5	2.8	5	1.7	9	--	--
380	1.5	10			--	--	1.6	5	1.4	5			--	--
381	4.0	3			--	--	4.0	3	--	--			--	--
383	3.1	16			3.0	6	4.0	2	3.0	2	3.0	6	--	--
386	2.3	30	1.0	7	2.8	13	3.2	5	2.0	5			--	--
388	3.8	4			3.8	4			--	--			--	--
389	2.4	7			2.3	3	2.5	4	--	--			--	--
390	3.1	22	3.1	22	--	--			--	--			--	--
391	0.0	1			--	--			0.0	1			--	--

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents)

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent) 3 (Good) 2 (Satisfactory)	0.00 - 0.50 0.51 - 1.00 1.01 - 1.50	1 (Marginal) 0 (Unsatisfactory) NR (Not Rated)	1.51 - 2.00 greater than 2.00

Lab	Analyte =		Silver (Ag)		Aluminum (Al)		Arsenic (As)		Boron (B)		Barium (Ba)	
	MPV =	1.14 µg/L	F-pseudosigma =	0.104	71.0 µg/L	5.34	2.67 µg/L	0.267	158 µg/L	11.8	42.2 µg/L	1.95 (2.11)
	OLR	V/28	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	3.3	28	0.387	0	75.65	3	2.575	4	159.5	4	45.17	2
5	2.9	21	<4.00	NR	96.7	0	2.62	4	159	4	43.6	3
7	2.6	24			68.2	3	5.73	0	148	3	28.7	0
8	2.8	27	1.03	2	65	2	2.55	4	130	0	43.1	4
10	2.8	9			--	--	2.5	3	--	--		
12	2.7	13	1	2	--	--			--	--		
16	2.8	25	1.2	3	71	4	2.8	4	--	--	39	2
18	1.3	16	<3	NR	<100	NR	2.66	4	150	3	38.8	1
21	0.0	1			--	--			--	--		
23	2.0	20	44	0	--	--	110	0	--	--	40.4	3
24	3.1	11			<202	NR	<121	NR	156	4	43.4	3
25	2.8	16	< 17	NR	67.8	3	< 21	NR	165.9	3	40.1	3
30	2.3	8			71	4	2.7	4	--	--		
32	3.3	28	1.09	4	72.5	4	2.58	4	150	3	41.5	4
33	1.2	9			102.3	0			--	--	44.79	2
42	2.4	27	<1	NR	68.8	4	2.91	3	157	4	42.4	4
45	3.0	26	1.14	4	68.1	3	2.49	3	158	4	39.8	2
46	3.5	11			<100	NR	<3	NR	--	--	41	3
50	3.4	27	1.08	3	74.6	3	2.67	4	162	4	41.6	4
59	3.2	25	0.78	0	66.7	3	2.7	4	32.6	0	42.5	4
64	4.0	5			--	--			--	--		
70	2.9	24	<10	NR	76.7	2	2.6	4	--	--	40	2
76	3.9	18	<2.0	NR	--	--	2.669	4	--	--	42	4
86	3.2	15			70.3	4			154	4	39.5	2
89	2.0	4			--	--			--	--		
97	2.2	20	1.32	1	73	4	2.04	0	--	--	41.2	4
100	2.5	23	1.17	4	65.2	2	2.13	0	150	3	46.4	0
105	2.3	19	1.1	4			<4.0	NR	<200	NR	47	0
110	3.2	6			71.66	4			--	--		
113	2.3	19	1	2	71	4			--	--	42.3	4
134	3.6	27	1.24	2	75	3	2.69	4	157	4	42	4
138	3.0	25	1.14	4	67.7	3	2.01	0	146	2	40.1	3
142	3.3	27	<1	NR	69.3	4	2.72	4	174	2	43	4
146	1.9	20	<10.0	NR	60	0	5	0	--	--	43.6	3
147	4.0	6			--	--	2.57	4	--	--		
149	2.9	22	1.1	4	71	4	3	2	--	--	41	3
180	2.6	22	0.997	2	62	1	2.59	4	--	--	40.1	3
183	1.9	7			--	--			--	--	40.55	3
190	2.9	18	1.06	3	76.2	3	2.1	0	--	--		
193	2.1	7	1.06	3	--	--			--	--		
212	2.9	28	1.19	3	65.2	2	2.95	2	145	2	45.3	2
219	3.1	26			70.9	4	3.4	0	158	4	42.5	4
220	2.9	11			74	3			167	3	41.9	4
227	3.2	5			--	--			--	--		
230	2.7	27	1.3	1	54	0	2.9	3	166	3	43.7	3

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =			Silver (Ag)		Aluminum (Al)		Arsenic (As)		Boron (B)		Barium (Ba)	
Lab	OLR	V/28	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
234	3.0	25	1.47	0	71.9	4	2.38	2	172	2	41.2	4
235	2.9	28	1.16	4	71.1	4	2.66	4	163	4	42.6	4
247	2.8	10	<10	NR	<80	NR	<40	NR	160	4	40	2
256	1.9	18	1.4	0	75	3	1.88	0	--	--		
259	3.3	19			69	4	2.45	3	173	2	43.2	4
265	3.2	28	1.1	4	68	3	2.7	4	150	3	40	2
273	2.3	14			83.2	0			129	0	43.1	4
274	1.0	5			--	--			--	--		
277	2.0	13	1.29	2	99.6	0			--	--		
279	3.8	4			--	--			--	--		
304	3.5	21	1.16	4	73	4	2.95	2	--	--	42.4	4
307	2.3	10	1.03	2	--	--	2.32	2	--	--		
323	3.2	27	1.12	4	74	3	2.7	4	167	3	42.8	4
326	2.5	16			--	--			167.5	3	42.5	4
327	2.0	2			--	--			--	--		
328	2.3	28	1	2	160	0	2.77	4	145	2	43	4
330	3.2	20	1.17	4	67.2	3	3.03	2	--	--	41.9	4
356	3.1	26	1.13	4	65.5	2	3.06	2	168	3	42.7	4
379	1.4	17	1.71	0	47.3	0	5.67	0	--	--	41.8	4
386	1.0	7			--	--			--	--		
390	3.1	22	1.14	4	80	1	2.62	4	--	--	43.3	3

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Beryllium (Be)	Calcium (Ca)	Cadmium (Cd)	Cobalt (Co)	Chromium (Cr)
MPV =	2.00 µg/L	34.8 mg/L	1.26 µg/L	1.26 µg/L	4.88 µg/L
F-pseudosigma =	0.137	0.96 (1.74)	0.082	0.104	0.330
Lab	RV Rating	RV Rating	RV Rating	RV Rating	RV Rating
1	1.931 4	35.4 4	1.288 4	1.366 2	4.87 4
5	1.98 4	35.3 4	1.22 4	<3.00 NR	6.8 0
7	2.07 3	33.3 3	1.38 1	1.23 4	4.68 3
8	1.76 1	34.4 4	1.17 2	1.1 1	4.88 4
10	-- --	-- 3	-- --	-- --	5 4
12		34.6 4	1.3 3	-- --	
16	2 4	33 2	1.7 0	1.4 2	5.3 2
18	1.96 4	32.9 2	<3 NR	<5 NR	<5 NR
21	-- --		-- --	-- --	
23	1.97 4	35 4	1.03 0	-- --	5.41 1
24		33.4 3	<10 NR	<9 NR	<26 NR
25	1.8 2	37.67 1	< 8 NR	< 4 NR	< 15 NR
30		36 3		-- --	
32	2 4	34 4	1.23 4	1.36 3	4.48 2
33		33.08 3		-- --	
42	1.89 3	33.7 3	<1 0	1.09 1	4.56 3
45	1.96 4	34.8 4	1.17 2	1.2 3	4.67 3
46	<2.0 NR	35.6 4	1.24 4	-- --	5.3 2
50	2.15 2	34.9 4	1.22 4	1.27 4	5.1 3
59	2.02 4	34.1 4	1.27 4	1.2 3	4.69 3
64		35 4		-- --	
70	2.1 3	35.7 3	1.4 1	1.2 3	4.8 4
76	1.999 4	34.78 4	1.294 4	1.229 4	4.688 3
86	1.82 2	35.1 4	1.18 3	1.6 0	
89	-- --	-- 3	-- --	-- --	
97	2.23 1	34.2 4	1.38 1	1.59 0	5.24 2
100	2.11 3	37.1 2	1.3 3	<10 NR	4.9 4
105	2 4	37.5 1	1.1 1	<50 NR	5.1 3
110		34.86 4		-- --	
113	2.3 0	35 4	1.7 0	-- --	4.2 0
134	2.1 3	35 4	1.13 1	1.3 4	4.77 4
138	1.91 3	34.7 4	1.27 4	1.26 4	3.19 0
142	1.92 3	35.9 3	1.23 4	1.16 3	4.49 2
146	1.58 0	36.8 2	1.14 2	<10.0 NR	5.36 2
147	-- --	-- 4	-- --	-- --	
149	2 4	34.2 4	1.2 3	1 0	5 4
180	1.69 0	34.6 4	1.19 3	1.13 2	4.09 0
183	-- --	-- 1	-- --	-- --	5.38 1
190		35.7 3	1.26 4	-- --	4.07 0
193		32.9 2	1.37 2	-- --	
212	2.16 2	33.7 3	1.4 1	1.31 4	4.35 1
219	2 4	34.3 4	1.25 4	1.26 4	4.5 2
220		34.4 4		-- --	
227		36 3	1.22 4	-- --	
230	2.1 3	35 4	1.3 3	1.3 4	4.8 4

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Beryllium (Be)		Calcium (Ca)		Cadmium (Cd)		Cobalt (Co)		Chromium (Cr)	
MPV =	2.00 µg/L		34.8 mg/L		1.26 µg/L		1.26 µg/L		4.88 µg/L	
F-pseudosigma =	0.137		0.96 (1.74)		0.082		0.104		0.330	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
234	2.13	3	34.8	4	1.17	2	<2.0	NR	6.12	0
235	1.74	1	35.3	4	1.41	1	1.28	4	4.88	4
247	<10	NR	34	4	<10	NR	<10	NR	<10	NR
256	1.98	4	--	--	0.68	0	1.24	4	4.38	2
259			35.4	4	1.25	4	--	--	4.89	4
265	2	4	34.7	4	1.4	1	1.1	1	4.7	3
273	2.25	1	34.5	4			--	--		
274			34.68	4			--	--		
277			32.2	2	1.15	2	--	--	4.98	4
279			36.08	3			--	--		
304	2.25	1	--	--	1.31	3	1.27	4	4.82	4
307			--	--	1.3	3	--	--	5.14	3
323	2.4	0	34.6	4	1.2	3	1.22	4	4.8	4
326			35.1	4	1.4	1	2	0		
327	<10	NR	--	--			--	--		
328	1.92	3	36.6	2	1.27	4	4.63	0	4.9	4
330	1.99	4	35.8	3	1.25	4	--	--	5.44	1
356	1.88	3	34.4	4	1.31	3	1.32	3	4.73	4
379	1.85	2	--	--	1.58	0	2.02	0	5.18	3
386			31.9	1			--	--		
390			36.4	3	1.32	3	1.25	4	4.91	4

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Copper (Cu)		Iron (Fe)		Potassium (K)		Lithium (Li)		Magnesium (Mg)	
	MPV =	7.50 µg/L	F-pseudosigma =	0.630	21.4 µg/L	3.43	3.85 mg/L	17.1 µg/L	9.38 mg/L	0.297 (0.469)
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	7.833	3	18.2	3	3.87	4	15.94	3	9.25	4
5	8.07	3	25.1	2	4.59	0	17.2	4	9.21	4
7	6.79	2	<20	NR	4.03	3	<20	NR	8.97	3
8	6.85	2	<50	NR	3.83	4	15.1	2	9.2	4
10	7.1	3	24	3	--	--	--	--	--	--
12	8.2	2	21	4	3.8	4	--	--	9.49	4
16	7.5	4	21.5	4	4	3	--	--	9.1	3
18	5.75	0	<60	NR	3.33	0	--	--	8.32	0
21			0.0232	0			--	--		
23	7.58	4	24.1	3	3.84	4	--	--	9.68	3
24	<18	NR	29.6	0	3.85	4	--	--	9.19	4
25	9.4	0	20.6	4	3.83	4	16	3	9.28	4
30			96	0			--	--	9.8	3
32	7.68	4	21.4	4	3.95	3	17	4	9.45	4
33			--	--	3.9	4	--	--	11.54	0
42	5.7	0	0.03	0	3.82	4	16.9	4	9	3
45	7.06	3	19.7	4	3.72	3	--	--	8.96	3
46	7.14	3	<300	NR	3.78	4	--	--	9.26	4
50	7.5	4	19.9	4	3.72	3	18.5	3	9.4	4
59	7.62	4	< 50	NR	3.84	4	16.7	4	9.24	4
64			--	--	3.94	4	--	--	9.2	4
70	7.1	3	<20	NR	4.06	2	--	--	9.61	4
76	<20.0	NR	--	--	3.847	4	16.98	4	9.395	4
86			--	--	3.95	3	17.2	4	9.44	4
89	5	0	--	--			--	--		
97	8.29	2	--	--			--	--	9.39	4
100	<5	0	21.5	4	3.97	3	<0.05	0	9.37	4
105	<10	NR	20	4	4.15	1	<25	NR	10.3	1
110			--	--	3.68	3	--	--	9.29	4
113	10.5	0	20	4	3.8	4	--	--	9.4	4
134	7.2	4	21.7	4	3.9	4	17.8	4	9.15	4
138	7.31	4	22.3	4	3.77	4	--	--	9.32	4
142	6.47	1	20	4	3.9	4	18.2	3	9.52	4
146	7.1	3	25.9	2	4.43	0	--	--	10	2
147	7.55	4	--	--			--	--		
149	8	3	<60	NR	3.8	4	--	--	9.2	4
180	6.84	2	20.6	4	3.79	4	--	--	9.25	4
183	9.38	0	--	--			--	--		
190	7.3	4	20.7	4	3.48	1	--	--	10.1	1
193	<12.5	NR	--	--	3.66	3	--	--	8.93	3
212	7.51	4	26	2	3.73	3	18.1	3	9.31	4
219	7.3	4	<20	NR	3.95	3	16.5	4	9.34	4
220					3.83	4	--	--	9.12	3
227	8.25	2	--	--			--	--	9.6	4
230	7.9	3	12	0	4	3	18	3	9.53	4

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Copper (Cu)		Iron (Fe)		Potassium (K)		Lithium (Li)		Magnesium (Mg)	
	MPV =	7.50 µg/L	21.4 µg/L	3.85 mg/L	17.1 µg/L	9.38 mg/L				
	F-pseudosigma =	0.630	3.43	0.133 (0.192)	1.56	0.297 (0.469)				
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
234	8.23	2	22.2	4	3.8	4	19.7	1	9.6	4
235	7.41	4	25.2	2	9.41	0	15.1	2	9.59	4
247	<10	NR	<50	NR	3.55	1	20	1	8.87	2
256	<10	NR	14.39	0			17.3	4		
259			15.8	1	3.91	4	--	--	9.6	4
265	6.7	2	20	4	3.7	3	16	3	9.1	3
273			19.95	4	3.95	3	18.5	3	9.82	3
274			--	--	4.92	0	--	--	10.17	1
277	5.76	0	25.1	2	4.33	0	--	--	9.77	3
279			--	--	3.8	4	--	--	9.3	4
304	7.75	4	--	--			15.9	3		
307	6.79	2	<100	NR			--	--		
323	7.3	4	<50	NR	3.76	4	17	4	9.38	4
326	11.2	0	41.4	0	4.87	0	21.6	0	9.16	4
327	9.8	0	--	--			--	--		
328	7.24	4	37	0	4.63	0	15.6	3	10.1	1
330	7.7	4	--	--	3.84	4	--	--	9.41	4
356	7.49	4	21.7	4	3.91	4	--	--	9.54	4
379	8.17	2	20	4			--	--		
386			49.5	0	3.6	2	--	--	8.81	2
390	7.63	4	24	3	4.02	3	17.9	3	10.2	1

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Lab	Analyte = Manganese (Mn)		Molybdenum (Mo)		Sodium (Na)		Nickel (Ni)		Lead (Pb)	
	MPV =	495 µg/L		7.22 µg/L		36.5 mg/L		5.38 µg/L		4.59 µg/L
	F-pseudosigma =	24.7 (24.8)		0.434		0.96 (1.83)		0.445		0.385
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	498.8	4	7.336	4	36	4	6.689	0	4.28	3
5	511	3	<10.0	NR	37.1	4	<10.0	NR	4.42	4
7	482	3	5.96	0	36	4	5.3	4	4.33	3
8	477	3	7.2	4	35.6	4	5.5	4	4.4	4
10	467	2	--	--			--	--	4	1
12	482	3	8	1	35.4	3	4.9	2	6	0
16	478	3	7	4	35	3	4.9	2	4.7	4
18	465	2	--	--	33.4	1	<5	NR	7.65	0
21			--	--			--	--		
23	485	4	9.87	0	36.6	4	5.08	3	55	0
24	521	2	<17	NR	35.1	3	<16	NR	<43	NR
25	481.7	3	--	--	36.49	4	9.9	0	< 20	NR
30	560	0	--	--	38	3	--	--		
32	515	3	6.8	3	36.2	4	6.5	0	4.55	4
33	631	0	--	--	31.93	0	--	--		
42	0.499	0	6.76	2	34.9	3	4.93	3	3.48	0
45	496	4	6.84	3	36.8	4	4.91	2	4.3	3
46	502	4	--	--	36.7	4	<50	NR	4.92	3
50	470	2	6.88	3	36.5	4	5.65	3	4.68	4
59	455	1	6.44	1	36.7	4	5.51	4	4.43	4
64			--	--	37	4	--	--		
70	516	3	7.4	4	36	4	6.6	0	4.4	4
76			7.377	4	37.43	4	5.188	4	4.843	3
86	492	4	--	--	36.5	4	--	--		
89			--	--			--	--	4.24	3
97	484	4	4.71	0			5.84	2	3.91	1
100	516	3	<25	NR	38.3	3	<15	NR	4.49	4
105	541	1	8	1	39.7	1	<50	NR	4.8	3
110			--	--	64.36	0	--	--		
113	486	4	6.1	0	36.8	4	3.3	0	4.9	3
134	500	4	7	4	35.7	4	5.4	4	4.4	4
138	463	2	5.52	0	37.2	4	5.42	4	4.38	3
142	503	4	6.97	3	37.3	4	5.4	4	3.6	0
146	526	2	7.13	4	40.8	0	5.15	4	6.3	0
147			--	--			--	--	4.72	4
149	520	2	7	4	37	4	5	3	4	1
180	429	0	7.72	2	35.9	4	5.01	3	4.43	4
183			7.25	4			5.35	4	3.11	0
190	517	3	--	--	36.5	4	5.47	4	4.4	4
193			--	--	34.3	2	<12.5	NR	5.4	0
212	486	4	6.93	3	36.1	4	4.73	2	4.77	4
219	489	4	8.3	0	36.5	4	5.4	4	4.1	2
220	481	3	--	--	34.59	2	--	--		
227			--	--			--	--	<4.70	NR
230	504	4	7.4	4	37	4	4.1	0	4.7	4

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Manganese (Mn)		Molybdenum (Mo)		Sodium (Na)		Nickel (Ni)		Lead (Pb)	
	MPV =	495 µg/L		7.22 µg/L		36.5 mg/L		5.38 µg/L		4.59 µg/L
	F-pseudosigma =	24.7 (24.8)		0.434		0.96 (1.83)		0.445		0.385
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
234	498	4	6.07	0	36.7	4	5.51	4	4.59	4
235	471	3	7.32	4	34.9	3	5.78	3	4.92	3
247	500	4	<40	NR	35.8	4	<50	NR	<40	NR
256	446	1	--	--			4.1	0	5.09	2
259	508	3	7.24	4	36.7	4	4.95	3	4.9	3
265	485	4	7.5	3	35.5	3	5	3	4.4	4
273	531	2	--	--	35.75	4	--	--		
274			--	--	40.96	0	--	--		
277			--	--	36.2	4	5.34	4	5.59	0
279			--	--	36.65	4	--	--		
304	485	4	7.2	4			5.55	4	4.95	3
307	484	4	--	--			5.5	4	5.31	1
323	498	4	7.5	3	36.2	4	4.9	2	4.9	3
326	498.7	4	--	--	36.7	4	5.3	4	4.4	4
327			--	--			--	--		
328	541	1	9.24	0	40.4	0	5.73	3	4.61	4
330	495	4	7.3	4	37.9	3	6.29	0	4.61	4
356	516	3	7.33	4	37.6	3	5.6	4	5.5	0
379	489	4	--	--			6.46	0	3.66	0
386	448	1	--	--	33.3	1	--	--		
390	517	3	7.49	3	35.5	3	5.1	3	4.58	4

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Antimony (Sb)		Selenium (Se)		Silica (SiO ₂)		Strontium (Sr)		Thallium (Tl)	
MPV =	5.20 µg/L		2.47 µg/L		11.1 mg/L		279 µg/L		5.94 µg/L	
F-pseudosigma =	0.356		0.452		0.41 (0.56)		8.2 (14.0)		0.326	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	5.013	3	2.116	3	10.9	4	276.9	4	5.946	4
5	<20.0	NR	1.51	0	11.4	3	279	4		
7	5.29	4	2.1	3	10.03	1	278	4	5.46	2
8	4.5	1	2.2	3	10.6	3	274	4	5.7	3
10			2	2			--	--		
12			--	--			--	--		
16	5.2	4	6.1	0			280	4	5.8	4
18	5.92	0	1.99	2			255	1	9.66	0
21			--	--			--	--		
23	220	0	1.19	0			--	--	110	0
24			--	--	11.4	3	282	4		
25	< 50	NR	< 16	NR	11.57	3	285.8	4	< 51	NR
30			--	--	12	1	--	--		
32	4.9	3	3.58	0	11.5	3	276	4	5.6	2
33			--	--	12.06	1	252.15	1		
42	4.96	3	2.7	4	10.3	2	301	1	6.02	4
45	4.6	1	2.17	3	10.6	3	--	--	5.72	3
46			--	--			--	--		
50	5.08	4	2.47	4	10.7	3	270	3	5.75	3
59	5.41	3	2.73	3			280	4	5.95	4
64			--	--	10.9	4	--	--		
70	6.1	0	2.6	4	11.2	4	278	4	5.6	2
76	5.029	4	--	--			273.8	4	6.105	4
86			--	--			278	4		
89			--	--			--	--		
97	4.26	0	<1.78	NR			284	4	6.25	3
100	5.05	4	2.69	4	12.8	0	287	3	4.43	0
105	5.4	3	<7	NR	11.107	4	285	4	6	4
110			--	--	10.98	4	--	--		
113			--	--			268	3	4.6	0
134	4.86	3	2.63	4	10.94	4	275.9	4	6.12	3
138	5.38	4	2.47	4			274	4	6.16	3
142	5.51	3	2.63	4	11.5	3	281	4	5.8	4
146	5.9	1	<10.0	NR			--	--	5.9	4
147			--	--			273	4		
149	4.7	2	<3	NR			--	--	5	0
180	5.56	2	2.47	4			--	--	5.65	3
183			--	--			--	--		
190			2.07	3	11	4	285	4		
193			--	--			--	--		
212	5.23	4	2.32	4	11.3	4	305	1	6.34	2
219	5.48	3	2.2	3	11.29	4	279	4	5.2	0
220			--	--			--	--		
227			--	--			--	--		
230			2.6	4	12	1	294	2	6.3	2

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Antimony (Sb)		Selenium (Se)		Silica (SiO ₂)		Strontium (Sr)		Thallium (Tl)	
MPV =	5.20 µg/L		2.47 µg/L		11.1 mg/L		279 µg/L		5.94 µg/L	
F-pseudosigma =	0.356		0.452		0.41 (0.56)		8.2 (14.0)		0.326	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
234	5.14	4	<5.0	NR	11.3	4	276	4	6.24	3
235	5.66	2	1.99	2	12.4	0	274	4	6.07	4
247	<200	NR	<100	NR			300	2	<50	NR
256	4.69	2	1.92	2	10.7	3	267	3		
259			1.98	2	11.2	4	288	3		
265	5	3	2.3	4	10.3	2	268	3	5.8	4
273			32.1	0			290	3		
274			--	--	3.95	0	--	--		
277			--	--			--	--		
279			--	--			--	--		
304	5.13	4	2.52	4			280	4	5.86	4
307			3.28	1			--	--		
323	5.3	4	2	2	10.9	4	278	4	6.14	3
326			--	--			284	4		
327			--	--	11	4	--	--		
328	5.5	3	2.45	4	11.1	4	244	0	5.94	4
330	5.05	4	2.97	2			--	--	5.92	4
356	5.26	4	2.96	2	10.9	4	291	3	7.2	0
379			3.71	0			--	--	9.42	0
386			--	--	22.5	0	--	--		
390			--	--	11.36	4	291	3		

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Lab	Analyte =		Uranium (U)		Vanadium (V)		Zinc (Zn)	
	MPV =	1.92 µg/L		4.31 µg/L		348 µg/L		
	F-pseudosigma =	0.087 (0.096)		0.245		19.3		
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	2.017	2	4.252	4	345.6	4		
5			4.52	3	353	4		
7	1.9	4	<20	NR	337	3		
8	1.87	4	4.04	2	293	0		
10			--	--	353	4		
12			--	--	330	3		
16	2.3	0	4.5	3	333	3		
18			<5	NR	307	0		
21			--	--				
23			--	--	326	2		
24			<18	NR	355	4		
25			< 19	NR	361.2	3		
30			--	--				
32	1.93	4	4.25	4	360	3		
33			--	--				
42	2.06	1	4.15	3	348	4		
45	1.77	1	4.1	3	330	3		
46			--	--	344	4		
50			4.31	4	324	2		
59			4.19	4	343	4		
64			--	--				
70	1.9	4	4.5	3	359	3		
76			4.3	4				
86			3.94	2	351	4		
89			--	--	371	2		
97			3.96	2	348	4		
100			<5	NR	351	4		
105			<20	NR	395	0		
110			--	--				
113			--	--	344	4		
134			4.2	4	359	3		
138			4.05	2	333	3		
142	1.9	4	4.07	3	354	4		
146			4.2	4	360	3		
147			--	--	341	4		
149	1.8	2	4.3	4	370	2		
180			--	--	321	2		
183			--	--				
190			--	--	355	4		
193			--	--				
212	1.9	4	4.35	4	357	4		
219	1.73	1	4.3	4	332	3		
220			5.6	0	332	3		
227			--	--	362	3		
230	2	3	4.8	0	347	4		

Table 5. Laboratory performance ratings for standard reference sample T-173 (trace constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; mg/L, milligrams per liter; V/28, number of rated analyses out of 28 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Uranium (U)		Vanadium (V)		Zinc (Zn)	
	MPV =	1.92 µg/L	4.31 µg/L	<th>348 µg/L</th> <td></td>	348 µg/L	
	F-pseudosigma =	0.087 (0.096)	0.245		19.3	
Lab	RV	Rating	RV	Rating	RV	Rating
234			4.37	4	340	4
235	2.02	2	4.5	3	358	3
247			<10	NR	350	4
256			3.98	2	320	2
259			--	--	358	3
265	1.9	4	4.4	4	345	4
273			--	--	380	1
274			--	--		
277			--	--	358	3
279			--	--		
304	2	3	4.45	3	334	3
307			--	--	380	1
323	2.08	1	5.1	0	340	4
326			--	--	343.7	4
327			--	--		
328	1.97	3	4.47	3	384	1
330			--	--	372	2
356			4.48	3	328	2
379			4.72	1	331	3
386			--	--		
390			4.55	3	376	2

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents)

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =		Alkalinity		Boron (B)		Calcium (Ca)		Chloride (Cl)		Fluoride (F)		
Lab	OLR	MPV =	81.0 mg/L	F-pseudosigma =	150 µg/L	3.3 mg/L	1.26 (1.57)	36.4 mg/L	1.33 (1.82)	0.690 mg/L	0.0597	
1	3.3	15	82.27	4	165.1	0	30.9	4	36.81	4	0.719	4
4	3.7	3	81.6	4	--	--			36.5	4		
5	3.3	16	86	2	154	3	31.5	4	36.33	4	0.62	2
8	2.7	14	81	4	177	0	31.9	4	42.3	0		
10	3.6	12	82.9	4	--	--	32.3	3	36.3	4	0.76	2
12	2.7	9	83	4	--	--	32.3	3	--	--		
16	2.7	15	67	0	59	0	29.5	2	35.2	3	0.61	2
18	2.2	14	78.3	3	151	4	31.2	4	35.3	3	0.53	0
23	3.8	6	85	3	--	--	32	4	--	--		
24	3.8	13	80.88	4	147	4	30.5	3	36.6	4	0.704	4
25	2.7	15	83	4	148.4	4	35.09	0	36.2	4	0.64	3
30	3.4	9			--	--	31	4	37.2	4	0.74	3
32	3.4	16	80.2	4	143	3	32	4	34.9	3	0.688	4
33	1.7	13	79.7	4	--	--	29.85	3	39.92	1	0.35	0
38	3.4	9	41.27	0	--	--	31.3	4	--	--		
42	2.6	15	84.4	3	140	2	31	4	34.7	3	0.749	3
45	2.7	15	78.9	3	153	4	30.3	3	38.5	2	0.767	2
46	3.7	12	78.4	3	--	--	31.3	4	37	4	0.693	4
50	3.1	13	100	0	151	4	32.5	3	37.8	3	0.73	3
59	3.3	15	84.3	3	33.3	0	30.3	3	36.6	4	0.7	4
64	3.6	10			--	--	30.7	4	35.3	3		
70	3.2	15	77.7	3	--	--	32.4	3	35.4	3	0.79	1
76	3.8	10			152.6	4	31.71	4	35.2	3		
80	3.0	10	106.7	0	--	--	30.3	3	37.8	3		
86	3.7	9			145	3	31.3	4	--	--		
89	3.0	7	82.9	4	--	--			36.3	4		
91	3.8	4	80.2	4	--	--			36.2	4		
100	2.9	15	75.1	2	148	4	32.6	3	36.9	4	0.75	3
102	2.3	11			--	--	33.4	2	37.5	3	0.66	4
105	2.6	14	83.2	3	<200	NR	33.3	2	37.9	3	0.62	2
113	3.5	14	86	2	--	--	31	4	36.5	4	0.67	4
118	3.5	4	78.6	3	--	--			--	--		
121	4.0	1			--	--			36.38	4		
134	3.9	16	81.6	4	150	4	31.7	4	36.5	4	0.69	4
138	3.3	16	83.8	3	137	1	31.5	4	37.1	4	0.755	2
142	3.1	16	82	4	171	0	32.8	3	37	4	0.68	4
146	2.5	12	81.1	4	--	--	32.4	3	37.5	3	0.546	0
149	3.6	8			--	--	31	4	37.4	3	0.69	4
180	3.4	11	81	4	--	--	31.3	4	37.8	3	0.587	1
183	2.8	8	74	1	--	--			37.54	3	0.749	3
190	2.9	14	80.4	4	--	--	28.5	1	35.1	3	0.69	4
193	2.8	9	81.4	4	--	--	30	3	--	--		
208	4.0	2			--	--			36.2	4		
212	2.6	16	80.6	4	127	0	29.6	2	35.5	4	0.777	2
219	2.5	11			143	3	30.4	3	35.18	3	0.844	0

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =		Alkalinity		Boron (B)		Calcium (Ca)		Chloride (Cl)		Fluoride (F)				
Lab	OLR	MPV =	81.0 mg/L	F-pseudosigma =	150 µg/L	3.6 (1.57)	31.3 mg/L	36.4 mg/L	0.690 mg/L	V/16	Rating	7.0 (7.5)	1.33 (1.82)	0.0597
220	2.6	10	100.9	0	155	3	30.5	3	38.64	2	0.69	4		
224	2.6	9	72	0	--	--	30.82	4	--	--				
227	3.6	8	82.1	4	--	--	32.7	3	36.77	4				
230	3.3	14	113	0	146	3	32	4	37	4	0.69	4		
234	3.4	16	81	4	158	2	31.8	4	34.6	3	0.659	3		
247	2.7	16	80	4	150	4	29.5	2	37.1	4	0.66	4		
254	4.0	2			--	--			36	4				
256	3.0	14	84.17	3	--	--	30.83	4	35.28	3	0.56	0		
259	3.8	15	81	4	161	2	31.9	4	35.9	4	0.68	4		
263	3.3	9	83.7	3	--	--	30.6	4	37.3	4	0.71	4		
265	3.6	11			145	3	32.1	3	34.6	3	0.66	4		
266	3.8	12	85	3	--	--	32.2	3	36.6	4	0.68	4		
269	3.8	5	81	4	--	--			37	4	0.64	3		
273	2.6	13	79.25	4	--	--	33.6	2	35.92	4	0.7	4		
274	1.1	12	156.94	0	--	--	21.77	0	15.93	0	0.74	3		
276	3.2	6	82.6	4	--	--			38.2	3				
277	2.5	10			--	--	29.7	2	30.6	0	0.66	4		
279	3.8	4			--	--	32.64	3	--	--				
301	0.4	5			--	--	23.67	0	33.726	2				
307	3.2	6	81.7	4	--	--			36	4				
319	2.0	2			150	4			41	0				
321	2.9	7	78	3	--	--			35.6	4				
323	3.4	16	80	4	158	2	31.5	4	33.2	1	0.65	3		
326	3.8	8			153.6	4	31.9	4	35.5	4				
327	1.5	6			<250	NR			39	2	0.94	0		
328	2.3	16	80	4	150	4	32.7	3	35	3	0.81	0		
330	3.2	5	81	4	--	--			35	3	0.74	3		
333	3.6	5	79.5	4	--	--			--	--				
341	3.1	14	69.8	0	163	1	30.2	3	36.8	4				
356	3.7	6	83.2	3	--	--			36.7	4	0.632	3		
366	3.5	11	79.3	4	--	--	32.8	3	39.1	2				
374	4.0	1			--	--			36	4				
377	3.7	16	83	4	151	4	29	2	37.6	3	0.7	4		
379	2.3	12	78.3	3	--	--	31.7	4	36	4	0.7	4		
383	3.0	6			--	--	31.7	4	34.8	3				
386	2.8	13	80	4	--	--	29.2	2	36	4	0.666	4		
388	3.8	4	78	3	--	--			36	4				
389	2.3	3			--	--			--	--				

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Potassium (K)		Magnesium (Mg)		Sodium (Na)		pH		Residue on Evaporation	
	MPV =	4.37 mg/L	F-pseudosigma =	18.5 mg/L	1.04 (1.26)	9.50	0.185 (0.475)	260 mg/L		
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	4.38	4	17.7	3	24.8	4	9.57	4	261.7	4
4			--	--			--	--		
5	4.37	4	17.9	3	25.2	4	9.09	3	268	3
8	4.3	4	18.3	4	25.3	4	9.5	4	273	3
10	4.3	4	18.4	4	25.4	4	9.3	4	251	3
12	4.5	3	19	3	26.3	3	8.9	2		
16	4.5	3	18	3	24.1	3	9.44	4	262	4
18	3.86	0	17.2	2	23.8	2	--	--	380	0
23	4.33	4	18.9	4	24.9	4	9.7	4		
24	4.4	4	18.8	4	24.6	4	9.55	4		
25	3.94	1	15.84	0	26.28	3	9.32	4	250	3
30			19	3	26	3	9.65	4		
32	4.4	4	18.7	4	25.6	4	9.71	4	252	3
33	4.39	4	20.95	0	22.98	1	9.27	4		
38	4.45	4	18.5	4	24.4	3	9.3	4		
42	4.24	3	17.7	3	24.7	4	6.94	0		
45	4.17	3	17.6	3	23.9	3	9.62	4	220	0
46	4.25	3	17.8	3	24.7	4	9.37	4	254	4
50	4.35	4	19	3	25.8	3	9.4	4	263	4
59	4.37	4	18.4	4	25.1	4	9.374	4	255	4
64	4.43	4	18.1	4	25.8	3	9.62	4		
70	4.35	4	18.7	4	25.3	4	9.49	4	270	3
76	4.448	4	--	--	25.12	4	--	--		
80	4.6	2	18.5	4	24.7	4	9.18	3	250	3
86	4.46	4	18.5	4	25.7	4	9.32	4		
89			--	--			9.24	3	247	3
91			--	--			9.49	4		
100	4.49	3	18.4	4	26.7	2	9.59	4	354	0
102	3.4	0	22.7	0	18.3	0	--	--		
105	4.53	3	20.4	0	28.6	0	9.5	4	328	0
113	4.4	4	18.6	4	25.9	3	9.6	4	270	3
118			--	--			9.2	3	264	4
121			--	--			--	--		
134	4.42	4	18.2	4	24.9	4	9.59	4	258	4
138	4.27	4	18.5	4	25.8	3	9.72	4	254	4
142	4.43	4	19.2	3	26.3	3	9.58	4	231	1
146	4.67	2	19.2	3	27	2	9.71	4	240	2
149	4.2	3	19	3	24.6	4	--	--		
180	4.18	3	18.1	4	24.8	4	9.5	4		
183			--	--			9.62	4	286	1
190	5.3	0	19.3	3	28.2	0	9.41	4	261	4
193	4.16	3	17.6	3	23.9	3	9.66	4		
208			--	--			--	--		
212	4.03	1	17.9	3	24.3	3	9.83	3	245	2
219	4.2	3	17.7	3	24.3	3	--	--		

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Potassium (K)		Magnesium (Mg)		Sodium (Na)		pH		Residue on Evaporation	
	MPV =	4.37 mg/L	F-pseudosigma =	18.5 mg/L	MPV =	25.1 mg/L	pH	9.50	Residue on	260 mg/L
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
220	4.1	2	17.98	3	24.1	3	--	--		
224	4.0117	1	18.07	4	23.26	2	9.46	4	263	4
227			19	3			9.51	4	274	3
230	4.53	3	18.9	4	26	3	9.5	4		
234	4.45	4	18.6	4	24.8	4	9.71	4	248	3
247	3.81	0	16.7	1	23.6	2	9.5	4	273	3
254			--	--			--	--		
256	4.13	2	17.92	3	23.23	2	9.5	4	258.03	4
259	4.33	4	18.8	4	25.7	4	9.35	4	259	4
263			18.77	4			9.55	4	198	0
265	4.3	4	18.2	4	25.2	4	--	--		
266	4.43	4	18.6	4	25.8	3	9.56	4	266	4
269			--	--			9.62	4		
273	4.7	1	20.3	1	26	3	9.57	4	262	4
274	4.92	0	24.71	0	31.33	0	9.32	4		
276			--	--			9.55	4	297	0
277	4.77	1	18.9	4	25.8	3	9.6	4	248	3
279	4.3	4	18.2	4	25.62	4	--	--		
301			1.399	0			--	--		
307			--	--			9.63	4		
319			--	--			--	--		
321			--	--	23.2	1	9.47	4		
323	4.27	4	18.3	4	25.1	4	9.7	4	248	3
326	4.18	3	18.63	4	26.14	3	--	--		
327			--	--			--	--	127	0
328	4.96	0	19.7	2	28.5	0	9.04	3	240	2
330			--	--			9.3	4		
333			--	--			9.51	4		
341	4.4	4	18.9	4	25	4	9.45	4	284	1
356			--	--			--	--	267	4
366	4.38	4	18.4	4	24.9	4	9.09	3	260	4
374			--	--			--	--		
377	4.26	4	18.5	4	25.5	4	9.57	4	274	3
379	17.5	0	26.1	0	5.2	0	9.35	4	211	0
383	4.2	3	18.4	4	25.3	4	--	--		
386	4.01	1	17.2	2	23.2	1	9.45	4	262	4
388			--	--			--	--	258	4
389			--	--			9.93	3		

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>		<u>Rating</u>	<u>Absolute Z-value</u>	
4 (Excellent)	0.00 - 0.50		1 (Marginal)	1.51 - 2.00	
3 (Good)	0.51 - 1.00		0 (Unsatisfactory)	greater than 2.00	
2 (Satisfactory)	1.01 - 1.50		NR (Not Rated)		
Analyte =	Silica (SiO ₂)	Sulfate (SO ₄)	Specific Conductance	Strontium (Sr)	Total Phosphorus as P
MPV =	11.7 mg/L	56.2 mg/L	432 µS/cm	249 µg/L	0.056 mg/L
F-pseudosigma =	0.52 (0.59)	2.05 (2.81)	11.1 (21.6)	7.4 (12.5)	0.0089
Lab	RV	Rating	RV	Rating	RV
1	11.4	3	55.09	4	408.8
4			58.7	3	--
5	11.7	4	52.74	2	244
8	11.5	4	53.6	3	256
10	11.4	3	57.3	4	--
12			54	3	252.3
16			59.4	2	--
18	11.3	3	54.4	3	249
23			--	--	239
24	12.2	3	55.5	4	3
25	11.48	4	54.3	3	435
30	12	3	57.3	4	430
32	12.3	2	56.5	4	477.05
33	12.2	3	60.52	1	0
38	11.54	4	--	--	225.34
42	10.9	2	57.1	4	430.5
45	11.4	3	59.8	2	4
46			58.3	3	433
50	11.3	3	59.4	2	431
59	11.7	4	56.5	4	436
64	11.5	4	56.8	4	433
70	11.9	4	53.2	2	427
76			56.36	4	426
80			54.9	4	424
86			--	--	422
89			54.3	3	421
91			--	--	413
100	13.6	0	57.3	4	412
102	11.1	2	58	3	409
105	11.749	4	56.6	4	408
113	11.6	4	53.7	3	407
118			--	--	406
121			--	--	405
134	11.6	4	55.8	4	404
138	12.3	2	57.4	4	403
142	12.3	2	55.8	4	402
146			57	4	401
149			57.3	4	399
180			59.1	2	398
183			54.6	3	397
190	11.7	4	54.2	3	396
193	12.4	2	--	--	395
208			54.9	4	394
212	11.9	4	55.4	4	393
219	11.3	3	54.61	3	392

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>		<u>Rating</u>	<u>Absolute Z-value</u>	
4 (Excellent)	0.00 - 0.50		1 (Marginal)	1.51 - 2.00	
3 (Good)	0.51 - 1.00		0 (Unsatisfactory)	greater than 2.00	
2 (Satisfactory)	1.01 - 1.50		NR (Not Rated)		
Analyte =	Silica (SiO ₂)	Sulfate (SO ₄)	Specific Conductance	Strontium (Sr)	Total Phosphorus as P
MPV =	11.7 mg/L	56.2 mg/L	432 µS/cm	249 µg/L	0.056 mg/L
F-pseudosigma =	0.52 (0.59)	2.05 (2.81)	11.1 (21.6)	7.4 (12.5)	0.0089
Lab	RV	Rating	RV	Rating	RV
220			58.95	3	-- --
224	5.784	0	-- --	427 4	-- --
227			-- --	432 4	-- --
230	12	3	56.8 4	424 4	258 3
234	11.5	4	54.7 3	424 4	249 4
247	12.8	1	56.8 4	435 4	260 3
254			56 4		-- --
256	11.7	4	55.05 4	451 3	250 4
259	12.1	3	56.9 4	432 4	253.7 4
263			57.7 3	435 4	-- --
265	11.5	4	57.2 4		242 3
266	11.9	4	57 4	427 4	-- --
269			-- --	433 4	-- --
273	12.98	0	54.47 3	443 4	-- --
274	4.82	0	53.23 2	420 3	-- --
276			56.07 4	430 4	-- --
277			58 3	396 1	-- --
279			-- --		-- --
301	6.02	0	9.246 0		0.14 0
307			54.4 3	420 3	-- --
319			-- --		-- --
321			57.1 4	475 1	-- --
323	11.6	4	55.4 4	430 4	249 4
326			55.8 4		250.5 4
327	11	2	52 2	444 3	-- --
328	11.9	4	52 2	429 4	239 3
330			53.3 2		-- --
333	12.3	2	-- --	440 4	246 4
341			56 4	437 4	234 2
356			57.1 4	438 4	-- --
366			58.8 3	441 4	-- --
374			-- --		-- --
377	11.3	3	56.8 4	440 4	246 4
379			58.4 3	436 4	-- --
383			20.4 0		-- --
386	24	0	57.6 4	434 4	-- --
388			55.9 4		-- --
389			-- --	360 0	-- --

Table 6. Laboratory performance ratings for standard reference sample M-166 (major constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; V/16, number of rated analyses out of 16 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte = Vanadium (V) MPV = 17.2 µg/L F-pseudosigma = 1.04	Lab	RV	Rating
	1	18.53	2
	4		
	5	16.5	3
	8	23	0
	10		
	12		
	16	16.4	3
	18	17	4
	23		
	24	<18	NR
	25	< 19	NR
	30		
	32	17.6	4
	33		
	38		
	42	17.6	4
	45	17.1	4
	46		
	50		
	59	18.9	1
	64		
	70	15.4	1
	76	17.85	3
	80		
	86	17.1	4
	89		
	91		
	100	17.9	3
	102		
	105	<20	NR
	113		
	118		
	121		
	134	16.5	3
	138	16	2
	142	17.2	4
	146	17.7	3
	149	17.4	4
	180		
	183		
	190		
	193		
	208		
	212	17.5	4
	219	15.4	1

Analyte = Vanadium (V) MPV = 17.2 µg/L F-pseudosigma = 1.04	Lab	RV	Rating
	220	16.2	3
	224		
	227		
	230	18	3
	234	18	3
	247	20	0
	254		
	256	15.7	2
	259		
	263		
	265	16.8	4
	266		
	269		
	273		
	274		
	276		
	277		
	279		
	301		
	307		
	319		
	321		
	323	18	3
	326		
	327		
	328	16	2
	330		
	333		
	341	16.8	4
	356		
	366		
	374		
	377	17.1	4
	379		
	383		
	386		
	388		
	389		

Table 7. Laboratory performance ratings for standard reference sample N-77 (nutrient constituents)

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; V/5, number of rated analyses out of 5 possible; RV, reported value; <, less than; NR, not rated; --, not reported.]

<u>Rating</u>	<u>Absolute Z-value</u>		<u>Rating</u>	<u>Absolute Z-value</u>	
4 (Excellent)	0.00 - 0.50		1 (Marginal)	1.51 - 2.00	
3 (Good)	0.51 - 1.00		0 (Unsatisfactory)	greater than 2.00	
2 (Satisfactory)	1.01 - 1.50		NR (Not Rated)		
Analyte =	Ammonia + Organic N as N		Total Phosphorus as P	Orthophosphate as P	
MPV =	0.073 mg/L		0.065 mg/L	0.060 mg/L	
F-pseudosigma =	0.0074		0.0048	0.0038	
Lab	OLR	V/5	RV Rating	RV Rating	RV Rating
1	3.6	5	0.072 4	0.096 4	0.063 3
5	1.2	5	0.11 0	0.22 0	0.061 2
8	2.0	4		0.07 3	0.055 0
10	3.4	5	0.07 4	0.08 3	0.071 3
16	2.8	5	0.08 3	0.072 3	0.073 2
21	4.0	5	0.0718 4	0.108 4	0.0647 4
23	3.3	4	0.07 4	0.136 3	<0.10 NR
31	4.0	5	0.072 4	0.105 4	0.069 4
33	0.5	4	0.083 2	-- --	0.084 0
38	3.6	5	0.078 3	0.09 4	0.065 4
42	2.3	3		-- --	0.063 3
45	1.3	3		-- --	0.092 0
46	3.5	4	0.07 4	<0.4 NR	0.071 3
50	3.0	2	0.069 3	-- --	-- --
51	3.4	5	0.07 4	0.083 3	0.06 2
59	3.2	5	0.081 2	0.11 4	0.068 4
64	3.8	4	0.08 3	-- --	0.07 4
70	3.2	5	0.072 4	0.094 4	0.065 4
72	0.6	5	0.061 1	0.384 0	0.065 2
76	4.0	1	0.071 4	-- --	-- --
80	1.3	3	0.07 4	-- --	0.65 0
86	2.0	3	0.0826 2	-- --	0.0458 0
89	2.4	5	0.0552 0	0.132 3	0.063 3
90	2.7	3	0.021 0	0.084 4	0.07 4
91	2.0	3	0.047 0	<0.10 NR	0.072 3
102	2.0	5	0.08 3	0.35 0	0.084 0
105	1.8	4	0.04 0	<1.00 NR	0.07 4
110	3.5	2	0.08 3	-- --	0.068 4
113	2.8	5	0.062 1	0.07 3	0.067 4
118	3.4	5	0.076 4	0.082 3	0.071 3
134	2.8	4	0.068 3	< 0.2 NR	0.062 3
138	3.8	5	0.074 4	0.087 4	0.066 4
142	3.4	5	0.0763 4	0.14 3	0.0706 3
146	1.3	4	0.0946 0	0.155 2	0.0958 0
180	3.0	5	0.078 3	0.099 4	0.062 3
190	3.0	5	0.074 4	0.119 4	0.064 4
193	2.8	4	0.07 4	0.57 0	0.07 4
198	3.0	4	0.0778 3	-- --	0.0654 4
234	3.0	4	0.075 4	-- --	0.068 4
247	0.8	5	0.073 4	0.21 0	0.09 0
313	3.6	5	0.0751 4	0.134 3	0.0699 4
316	3.8	5	0.0766 4	0.083 3	0.0644 4
318	3.2	5	0.059 1	0.092 4	0.068 4
320	3.6	5	0.0739 4	0.1073 4	0.0637 3
321	2.5	4	0.08 3	-- --	0.06 2

Table 7. Laboratory performance ratings for standard reference sample N-77 (nutrient constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; V/5, number of rated analyses out of 5 possible; RV, reported value; <, less than; NR, not rated; --, not reported.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Ammonia +		Total		Orthophosphate as P	
	Ammonia as N		Nitrate as N		Phosphorus as P	
	MPV =	0.073 mg/L	0.105 mg/L	0.067 mg/L	0.065 mg/L	0.060 mg/L
F-pseudosigma =	0.0074	0.0419	0.0059	0.0048	0.0038	
Lab	OLR	V/5	RV	Rating	RV	Rating
323	0.8	5	0.1	0	0.2	0
327	3.0	2	0.08	3	<0.20	NR
328	0.4	5	0.042	0	0.263	0
333	4.0	2	0.077	4	--	--
341	2.4	5	0.068	3	0.08	3
366	1.0	5	0.139	0	0.343	0
369	2.8	5	0.063	2	0.073	3
373	2.0	4	0.093	0	<0.28	NR
377	2.6	5	0.065	2	0.14	3
378	3.8	5	0.0773	3	0.118	4
379	2.6	5	0.08	3	0.09	4
380	1.6	5	0.0808	3	0.0307	1
381	4.0	3	0.072	4	--	--
383	4.0	2	0.07	4	--	--
386	3.2	5	0.064	2	0.102	4
389	2.5	4	0.07	4	--	--

Table 8. Laboratory performance ratings for standard reference sample N-78 (nutrient constituents)

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; V/5, number of rated analyses out of 5 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>		<u>Rating</u>	<u>Absolute Z-value</u>	
4 (Excellent)	0.00 - 0.50		1 (Marginal)	1.51 - 2.00	
3 (Good)	0.51 - 1.00		0 (Unsatisfactory)	greater than 2.00	
2 (Satisfactory)	1.01 - 1.50		NR (Not Rated)		
Analyte =	Ammonia + Organic N as N		Total Phosphorus as P	Orthophosphate as P	
MPV =	0.789 mg/L		0.640 mg/L	0.632 mg/L	
F-pseudosigma =	0.0456		0.0267 (0.0320)	0.0200 (0.0316)	
Lab	OLR	V/5	RV Rating	RV Rating	RV Rating
1	3.8	5	0.771 4	0.943 4	0.654 4
5	2.6	5	0.835 3	0.98 4	0.701 2
8	0.4	5	0.9 0	1.1 1	0.79 0
10	3.2	5	0.81 4	0.91 4	0.854 0
16	3.2	5	0.77 4	0.78 1	0.64 3
18	1.5	4	0.71 1	1.113 1	0.877 0
23	1.6	5	0.68 0	1.19 0	0.93 0
26	0.0	3	0.96 0	-- --	0.59 0
30	3.5	2	-- --	-- --	0.693 3
33	2.3	4	0.881 0	-- --	0.65 4
38	2.8	5	0.833 3	0.87 3	0.866 0
42	3.3	3	-- --	-- --	0.635 3
45	4.0	3	-- --	-- --	0.672 4
46	2.2	5	0.792 4	1.22 0	0.631 3
50	4.0	2	0.782 4	-- --	-- --
59	3.0	5	0.794 4	0.84 3	0.883 0
64	3.0	4	0.8 4	-- --	0.91 0
70	2.8	5	0.67 0	0.939 4	0.65 4
72	2.2	5	0.831 3	1.204 0	0.694 2
76	4.0	2	0.789 4	-- --	0.6615 4
80	2.0	3	0.76 3	-- --	0.78 0
86	2.3	4	0.792 4	-- --	0.844 0
89	2.2	5	0.627 0	0.93 4	0.873 0
90	2.0	3	0.721 2	0.941 4	0.886 0
91	0.8	4	0.687 0	0.703 0	0.883 0
102	3.2	5	0.72 1	1.03 3	0.65 4
105	3.0	5	0.73 2	1.09 2	0.64 3
113	4.0	5	0.806 4	0.91 4	0.649 4
118	3.8	5	0.799 4	0.93 4	0.691 3
134	3.8	5	0.785 4	0.894 4	0.68 3
138	4.0	5	0.811 4	0.932 4	0.66 4
142	2.0	5	0.712 1	1.001 3	0.869 0
146	1.8	5	0.821 3	0.952 4	0.878 0
180	3.2	5	0.822 3	0.883 3	0.675 4
183	3.5	2	<1 NR	-- --	<1 NR
190	4.0	5	0.785 4	0.966 4	0.651 4
193	2.5	4	0.78 4	0.94 4	0.87 0
198	2.8	4	0.857 2	-- --	0.714 1
205	0.0	2	0.952 0	-- --	0.784 0
208	2.0	2	-- --	-- --	0.66 4
212	0.8	5	0.67 0	0.69 0	0.86 0
220	2.8	5	0.747 3	0.792 2	0.67 4
227	3.4	5	0.76 3	0.92 4	0.642 3
234	2.0	4	0.79 4	-- --	0.661 4
247	2.8	5	0.785 4	1 3	0.64 3

Table 8. Laboratory performance ratings for standard reference sample N-78 (nutrient constituents) -- continued

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; V/5, number of rated analyses out of 5 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent) 3 (Good) 2 (Satisfactory)	0.00 - 0.50 0.51 - 1.00 1.01 - 1.50	1 (Marginal) 0 (Unsatisfactory) NR (Not Rated)	1.51 - 2.00 greater than 2.00

Analyte =	Ammonia +				Total				Orthophosphate as P	
	Ammonia as N		Organic N as N		Nitrate as N		Phosphorus as P		0.632 mg/L	0.0200 (0.0316)
	MPV =	0.789 mg/L	0.939 mg/L	0.660 mg/L	0.640 mg/L	F-pseudosigma =	0.0456	0.0310 (0.0330)	0.0267 (0.0320)	0.619
Lab	OLR	V/5	RV	Rating	RV	Rating	RV	Rating	RV	Rating
307	2.7	3	0.783	4	--	--	0.601	1	0.619	3
313	2.6	5	0.772	4	0.793	2	0.717	1	0.673	2
320	3.7	3	0.835	3	0.974	4	0.648	4	--	--
323	2.0	4	0.95	0	--	--	0.89	0	0.65	4
327	3.3	3	0.76	3	0.86	3			0.65	4
328	2.5	4	0.81	4	0.84	3			0.61	3
341	3.0	5	0.786	4	0.88	3	0.622	2	0.636	4
356	3.8	4	0.781	4	--	--	0.68	3	0.65	4
366	3.2	5	0.823	3	1.08	2	0.656	4	0.609	3
373	3.6	5	0.819	3	0.849	3	0.666	4	0.655	4
378	2.8	5	0.904	0	1.01	3	0.685	3	0.626	4
379	2.8	5	0.81	4	1.01	3	0.66	4	0.602	2
380	1.4	5	0.855	2	0.824	2	0.58	0	0.662	3
383	3.0	2	0.77	4	--	--	0.7	2	--	--
386	2.0	5	0.714	1	1.02	3	0.907	0	0.625	4
391	0.0	1			--	--			0.18	0

Table 9. Laboratory performance ratings for standard reference sample P-40 (low ionic-strength constituents)

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; $\mu\text{S}/\text{cm}$, microsiemens per centimeter at 25 degrees Celsius; V/11, number of rated analyses out of 11 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent) 3 (Good) 2 (Satisfactory)	0.00 - 0.50 0.51 - 1.00 1.01 - 1.50	1 (Marginal) 0 (Unsatisfactory) NR (Not Rated)	1.51 - 2.00 greater than 2.00

Lab	OLR	V/11	Analyte =		Acidity		Calcium (Ca)		Chloride (Cl)		Fluoride (F)		Potassium (K)	
			MPV =	inadequate data			0.728 mg/L 0.0437		15.2 mg/L 0.52 (0.76)		0.127 mg/L 0.0252		0.384 mg/L 0.0289	
			F-pseudosigma =		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	2.8	9					0.666	2	14.41	2	0.154	2	0.393	4
2	3.5	8					0.742	4			0.12	4	0.42	2
5	2.7	9					0.725	4	15.43	4	0.16	2	<1.00	NR
8	2.5	8	<20	NR			0.78	2	15.4	4	--	--	0.4	3
23	3.1	9					0.7	3	15.3	4	0.117	4	0.4	3
25	2.0	8	< 8	NR			0.807	1	15.2	4	0.24	0	0.325	0
33	2.3	10					0.745	4	18.05	0	0.25	0	0.35	2
38	3.4	7					0.75	4			--	--	0.4	3
45	3.4	10					0.711	4	15.4	4	0.133	4	0.348	2
46	3.3	9					0.729	4	14.8	3	0.101	2	0.403	3
59	3.2	6					--	--	15.2	4	0.13	4		
64	3.1	9					0.72	4	16	2	--	--	0.38	4
86	3.8	5					--	--			--	--	0.384	4
89	2.0	6	2.3	3			--	--	15.6	3	--	--		
105	2.2	9			10.6	3	0.797	1	15.4	4	<0.20	NR	<1.00	NR
110	3.3	8					0.756	3	14.9	4	0.124	4	0.357	3
113	3.6	8					--	--	15.2	4	0.1	2		
134	3.9	10					0.724	4	15.1	4	0.13	4	0.374	4
138	3.6	10					0.747	4	15.2	4	0.154	2	0.381	4
180	3.0	9					0.704	3	15.9	3	0.113	3	<0.45	NR
190	2.7	10					0.74	4	14.4	2	0.123	4	0.59	0
193	2.9	7					0.68	2			--	--	0.36	3
208	3.0	1					--	--	14.8	3	--	--		
247	2.3	10		19	0		0.63	0	14.5	3	0.12	4	0.31	0
265	2.7	7					0.68	2	14	1	0.04	0	0.37	4
273	2.3	11	4.18	3			0.775	2	15.25	4	0.14	3	0.365	3
274	1.9	10		4	3		0.81	1	17.92	0	<0.1	NR	0.39	4
277	2.8	5					--	--	15	4	--	--	0.424	2
279	3.0	4					0.72	4			--	--	0.3	0
301	1.8	5					0.727	4	14.388	2	--	--		
321	3.0	6					--	--	16.2	2	--	--		
323	3.4	9					0.77	3	14.5	3	0.12	4	<0.50	NR
326	2.7	6					0.72	4	14.8	3	--	--	0.42	2
327	1.3	3					--	--	16	2	0.26	0		
328	1.7	11			10	3	0.77	3	14	1	0.15	3	1.16	0
333	3.8	9					0.72	4	15.2	4	--	--	0.4	3
379	1.7	9					0.77	3	15.5	4	0.123	4	1.49	0
383	3.0	6					0.7	3	15.5	4	--	--	0.37	4

Table 9. Laboratory performance ratings for standard reference sample P-40 (low ionic-strength constituents)**-- continued**

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; $\mu\text{S}/\text{cm}$, microsiemens per centimeter at 25 degrees Celsius; V/11, number of rated analyses out of 11 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte = MPV = F-pseudosigma =	Magnesium (Mg)		Sodium (Na)		pH		Orthophosphate as P ($\text{PO}_4\text{-P}$)		Sulfate (SO_4)		
	Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
	1	1.56	3	5.3	4	4.95	0	--	--	0.878	4
2	1.622	4	5.676	3	4.434	4	--	--	0.923	4	
5	1.55	3	5.48	4	4.05	1	0.072	3	1.19	0	
8	1.8	1	5.8	2	4.4	4	<0.3	NR	1.3	0	
23	1.65	4	1.14	0	4.5	4	0.063	4	<5.0	NR	
25	1.57	3	5.69	3	4.33	3	0.058	2	< 5.0	NR	
33	1.604	4	5.091	2	4.46	4	0.16	0	0.85	4	
38	1.79	1	5.44	4	4.4	4	0.065	4			
45	1.58	4	5.41	4	4.4	4	0.065	4	1.13	1	
46	1.55	3	5.41	4	4.6	3	0.068	4	<15	NR	
59		--	--	3.94	0	0.061	3	0.87	4		
64	1.58	4	5.6	3	4.37	4	0.205	0	0.94	4	
86	1.65	4	5.6	3	4.53	4	--	--			
89		--	--	6.3	0	0.0652	4	1.07	2		
105	1.75	2	5.82	2	4.5	4	0.048	0	1.47	0	
110	1.574	4	5.08	2			--	--	0.865	4	
113	1.6	4	5.4	4	4.42	4	0.067	4	0.8	3	
134	1.62	4	5.53	4	4.48	4	0.062	3	0.88	4	
138	1.66	4	5.83	2	4.5	4	0.0663	4	0.85	4	
180	1.59	4	5.42	4	4.61	3	0.06	3	0.73	2	
190	1.71	3	4.62	0	4.48	4	0.055	2	0.9	4	
193	1.53	3	5.18	3	4.52	4	--	--	0.75	2	
208		--	--				--	--	<3	NR	
247	1.46	1	5.27	4	4.41	4	0.06	3	<1	NR	
265	1.63	4	5.3	4			--	--	0.9	4	
273	1.82	0	5.78	2	4.48	4	0.613	0	0.477	0	
274	1.94	0	5.01	2	4.32	3	0.24	0	0.81	3	
277			5.3	4	4.6	3	--	--			
279	1.58	4	5.5	4			--	--			
301	3.578	0	--	--			0.119	0	0.789	3	
321			4.97	1	4.38	4	0.071	3	0.9	4	
323	1.62	4	5.58	3	4.6	3	0.071	3	0.89	4	
326	1.62	4	5.2	3			--	--	4.02	0	
327		--	--				--	--	<5	NR	
328	1.7	3	6.37	0	4.67	3	0.15	0	3.25	0	
333	1.63	4	5.6	3	4.47	4	0.068	4	0.92	4	
379	5.39	0	0.491	0	4.12	1	0.046	0	<10	NR	
383	1.6	4	5.63	3			--	--	0.1	0	

Table 9. Laboratory performance ratings for standard reference sample P-40 (low ionic-strength constituents)**-- continued**

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; mg/L, milligrams per liter; $\mu\text{S}/\text{cm}$, microsiemens per centimeter at 25 degrees Celsius; V/11, number of rated analyses out of 11 possible; RV, reported value; <, less than; NR, not rated; --, not reported; (), rating criterion.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte = Lab	Specific Conductance	
	MPV =	66.8 $\mu\text{S}/\text{cm}$
	F-pseudosigma =	2.27 (3.34)
Lab	RV	Rating
1	66.8	4
2	63.5	3
5	65	3
8	66	4
23	71.6	2
25		
33	65.07	3
38	66.6	4
45	64.8	3
46	68.3	4
59	66.7	4
64	69.1	3
86	66	4
89	50.8	0
105	67	4
110	63.3	2
113	67.4	4
134	68	4
138	67.4	4
180	63	2
190	66	4
193	68.9	3
208		
247	68	4
265		
273	68	4
274	64.9	3
277	60.7	1
279		
301		
321	66.6	4
323	67	4
326		
327	71.1	2
328	69	3
333	68.2	4
379	68.7	3
383		

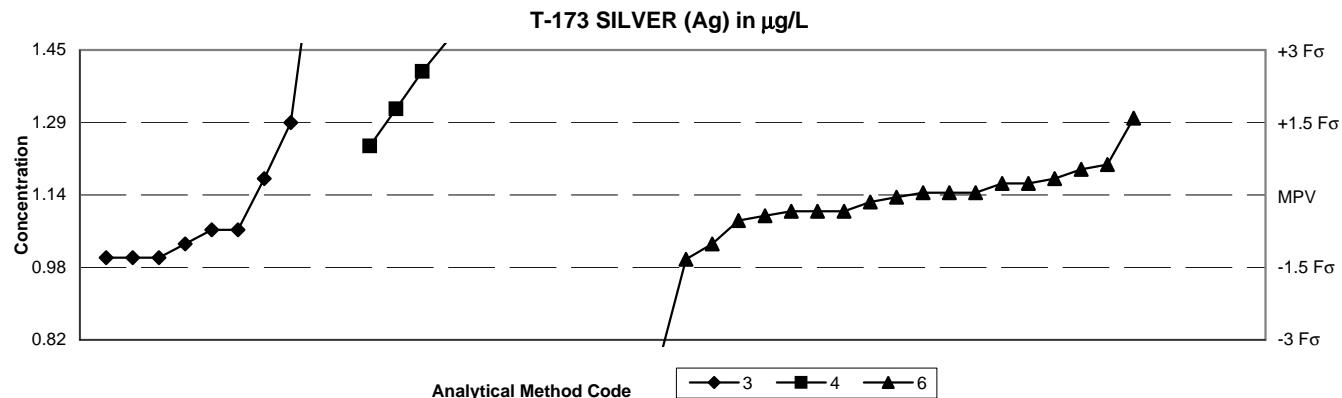
Table 10. Laboratory performance ratings for standard reference sample HG-36 (Mercury)

[MPV, most probable value; Lab, laboratory identification number; OLR, overall laboratory rating for all rated analyses; µg/L, micrograms per liter; V/1, number of rated analyses out of 1 possible; RV, reported value; <, less than; NR, not rated; --, not reported.]

<u>Rating</u>	<u>Absolute Z-value</u>	<u>Rating</u>	<u>Absolute Z-value</u>
4 (Excellent)	0.00 - 0.50	1 (Marginal)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Unsatisfactory)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

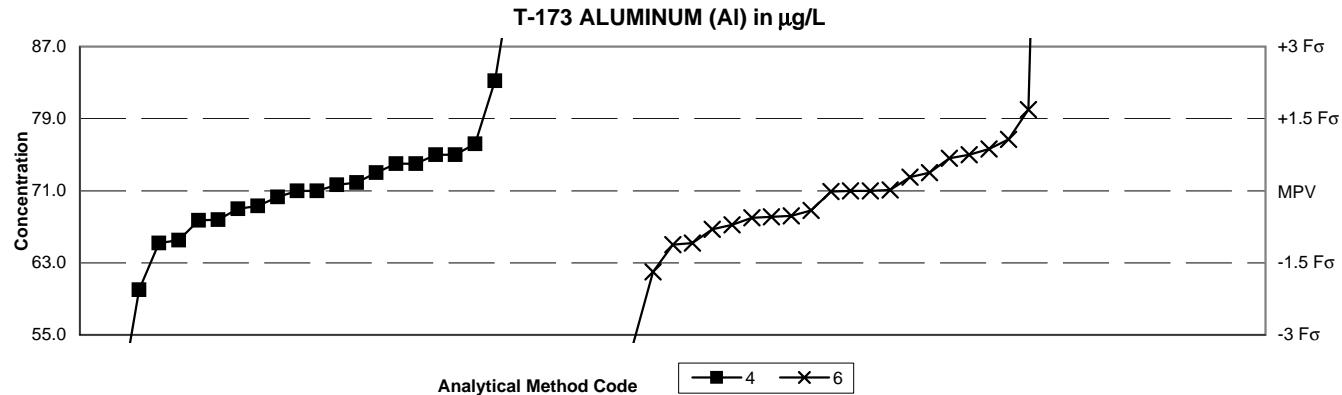
Lab	OLR	V/1	Analyte = Mercury (Hg)	
			MPV =	0.052 µg/L
			F-pseudosigma =	0.0051
1	3.0	1	0.0483	3
18	2.0	1	0.046	2
32	0.0	1	0.038	0
45	3.0	1	0.056	3
46	4.0	1	0.052	4
59	4.0	1	0.0533	4
105	NR	0	<0.2	NR
138	4.0	1	0.051	4
180	0.0	1	0.064	0
235	3.0	1	0.0476	3
245	2.0	1	0.057	2
247	NR	0	<0.2	NR
304	3.0	1	0.048	3
356	4.0	1	0.0531	4

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents)



SUMMARY			Methods			Statistics		
			3	4	6			
n =	9	5	20			Method Codes		
Minimum =	1	1.24	0.387	03 Atomic absorption: graphite furnace			MPV =	1.14 µg/L
Maximum =	1.71	44	1.3	04 Inductively coupled plasma			F-pseudosigma =	0.1038
Median =	1.06	1.40	1.13	06 Inductively coupled plasma / mass spectrometry			n =	34
F-pseudosigma =	0.126	0.111	0.056				Uh =	1.20
							Lh =	1.06
Method Codes								
Lab	Rating	Z-value	3	4	6	Lab	Rating	Z-value
1	0	-7.21	--	--	0.387	356	4	-0.05
5	NR	--	--	<4.00	--	379	0	5.54
8	2	-1.01	--	--	1.03	390	4	1.71
12	2	-1.30	1	--	--			--
16	3	0.63	--	--	1.2			1.14
18	NR	--	--	<3	--			
23	0	413.03	--	44	--			
25	NR	--	--	< 17	--			
32	4	-0.43	--	--	1.09			
42	NR	--	--	--	<1			
45	4	0.05	--	--	1.14			
50	3	-0.53	--	--	1.08			
59	0	-3.42	--	--	0.78			
70	NR	--	<10	--	--			
76	NR	--	--	--	<2.0			
97	1	1.78	--	1.32	--			
100	4	0.34	1.17	--	--			
105	4	-0.34	--	--	1.1			
113	2	-1.30	1	--	--			
134	2	1.01	--	1.24	--			
138	4	0.05	--	--	1.14			
142	NR	--	--	--	<1			
146	NR	--	--	<10.0	--			
149	4	-0.34	--	--	1.1			
180	2	-1.33	--	--	0.997			
190	3	-0.72	1.06	--	--			
193	3	-0.72	1.06	--	--			
212	3	0.53	--	--	1.19			
230	1	1.59	--	--	1.3			
234	0	3.23	--	1.47	--			
235	4	0.24	--	--	1.16			
247	NR	--	--	<10	--			
256	0	2.55	--	1.4	--			
265	4	-0.34	--	--	1.1			
277	2	1.49	1.29	--	--			
304	4	0.24	--	--	1.16			
307	2	-1.01	1.03	--	--			
323	4	-0.14	--	--	1.12			
328	2	-1.30	1	--	--			
330	4	0.34	--	--	1.17			

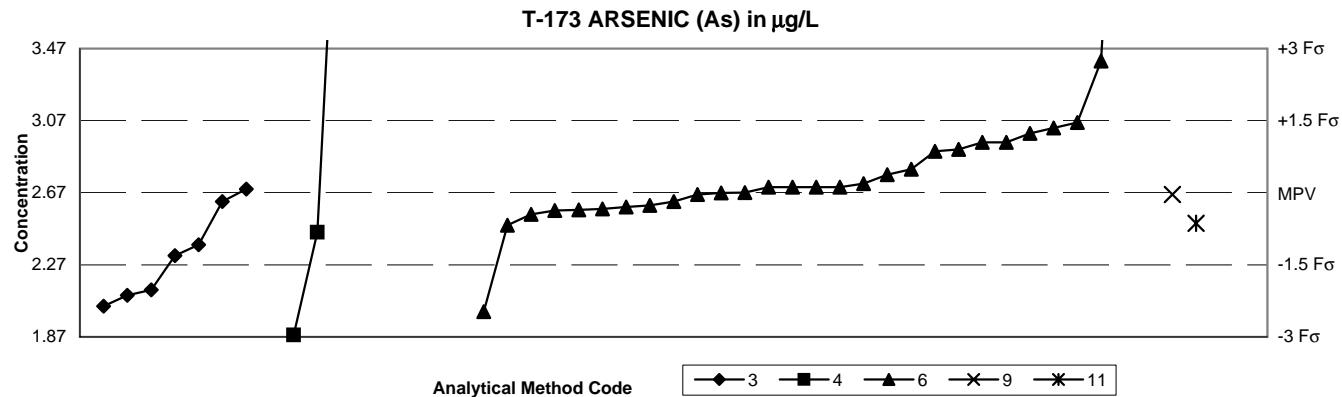
Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY				Methods				Statistics			
				Method Codes							
				3	4	5	6	03	Atomic absorption: graphite furnace	MPV =	71.0 $\mu\text{g/L}$
n =	1	21	1	22				04	Inductively coupled plasma	F-pseudosigma =	5.34
Minimum =	99.6	47.3	102.3	54				05	Direct current plasma	n =	45
Maximum =			96.7	160				06	Inductively coupled plasma / mass spectrometry	Uh =	75.0
Median =			71.0	71.0						Lh =	67.8
F-pseudosigma =		4.60		5.49							

Method Codes											
Lab	Rating	Z-value	3	4	5	6	Lab	Rating	Z-value	3	4
1	3	0.87	--	--	--	75.65	273	0	2.29	--	83.2
5	0	4.82	--	96.7	--	--	277	0	5.36	99.6	--
7	3	-0.52	--	--	--	68.2	304	4	0.37	--	--
8	2	-1.12	--	--	--	65	323	3	0.56	--	74
16	4	0.00	--	71	--	--	328	0	16.68	--	--
18	NR	--	--	<100	--	--	330	3	-0.71	--	--
24	NR	--	--	<202	--	--	356	2	-1.03	--	65.5
25	3	-0.60	--	67.8	--	--	379	0	-4.44	--	47.3
30	4	0.00	--	--	--	71	390	1	1.69	--	--
32	4	0.28	--	--	--	72.5					80
33	0	5.86	--	--	102.3	--					
42	4	-0.41	--	--	--	68.8					
45	3	-0.54	--	--	--	68.1					
46	NR	--	--	<100	--	--					
50	3	0.67	--	--	--	74.6					
59	3	-0.81	--	--	--	66.7					
70	2	1.07	--	--	--	76.7					
86	4	-0.13	--	70.3	--	--					
97	4	0.37	--	73	--	--					
100	2	-1.09	--	--	--	65.2					
105	3	0.75	--	--	--	75					
110	4	0.12	--	71.66	--	--					
113	4	0.00	--	71	--	--					
134	3	0.75	--	75	--	--					
138	3	-0.62	--	67.7	--	--					
142	4	-0.32	--	69.3	--	--					
146	0	-2.06	--	60	--	--					
149	4	0.00	--	--	--	71					
180	1	-1.69	--	--	--	62					
190	3	0.97	--	76.2	--	--					
212	2	-1.09	--	65.2	--	--					
219	4	-0.02	--	--	--	70.9					
220	3	0.56	--	74	--	--					
230	0	-3.19	--	--	--	54					
234	4	0.17	--	71.9	--	--					
235	4	0.02	--	--	--	71.1					
247	NR	--	--	<80	--	--					
256	3	0.75	--	75	--	--					
259	4	-0.37	--	69	--	--					
265	3	-0.56	--	--	--	68					

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods					Statistics		
			3	4	6	9	11	Method Codes		
	n =		7	5	28	1	1	03	Atomic absorption: graphite furnace	MPV = 2.67 µg/L
	Minimum =		2.04	1.88	2.01	2.66	2.5	04	Inductively coupled plasma	F-pseudosigma = 0.267
	Maximum =		2.69	110	5.73			06	Inductively coupled plasma / mass spectrometry	n = 42
	Median =		2.32	5.00	2.70			09	Atomic fluorescence	Uh = 2.91
	F-pseudosigma =		0.285	2.387	0.248			11	Atomic absorption: hydride	Lh = 2.55
Method Codes										
Lab	Rating	Z-value	3	4	6	9	11	Lab	Rating	Z-value
1	4	-0.35	--	--	2.575	--	--	307	2	-1.31
5	4	-0.19	2.62	--	--	--	323	4	0.11	
7	0	11.47	--	--	5.73	--	--	328	4	0.38
8	4	-0.45	--	--	2.55	--	--	330	2	1.35
10	3	-0.64	--	--	--	--	356	2	1.46	
16	4	0.49	--	--	2.8	--	--	379	0	11.24
18	4	-0.04	--	--	2.66	--	--	390	4	-0.19
23	0	402.19	--	110	--	--				
24	NR	--	--	<121	--	--				
25	NR	--	--	< 21	--	--				
30	4	0.11	--	--	2.7	--	--			
32	4	-0.34	--	--	2.58	--	--			
42	3	0.90	--	--	2.91	--	--			
45	3	-0.67	--	--	2.49	--	--			
46	NR	--	<3	--	--	--				
50	4	0.00	--	--	2.67	--	--			
59	4	0.11	--	--	2.7	--	--			
70	4	-0.26	--	--	2.6	--	--			
76	4	0.00	--	--	2.669	--	--			
97	0	-2.36	2.04	--	--	--				
100	0	-2.02	2.13	--	--	--				
105	NR	--	--	<4.0	--	--				
134	4	0.08	2.69	--	--	--				
138	0	-2.47	--	--	2.01	--	--			
142	4	0.19	--	--	2.72	--	--			
146	0	8.73	--	5	--	--				
147	4	-0.37	--	--	2.57	--	--			
149	2	1.24	--	--	3	--	--			
180	4	-0.30	--	--	2.59	--	--			
190	0	-2.13	2.1	--	--	--				
212	2	1.05	--	--	2.95	--	--			
219	0	2.74	--	--	3.4	--	--			
230	3	0.86	--	--	2.9	--	--			
234	2	-1.08	2.38	--	--	--				
235	4	-0.04	--	--	--	2.66	--			
247	NR	--	--	<40	--	--				
256	0	-2.96	--	1.88	--	--				
259	3	-0.82	--	2.45	--	--				
265	4	0.11	--	--	2.7	--	--			
304	2	1.05	--	--	2.95	--	--			

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued

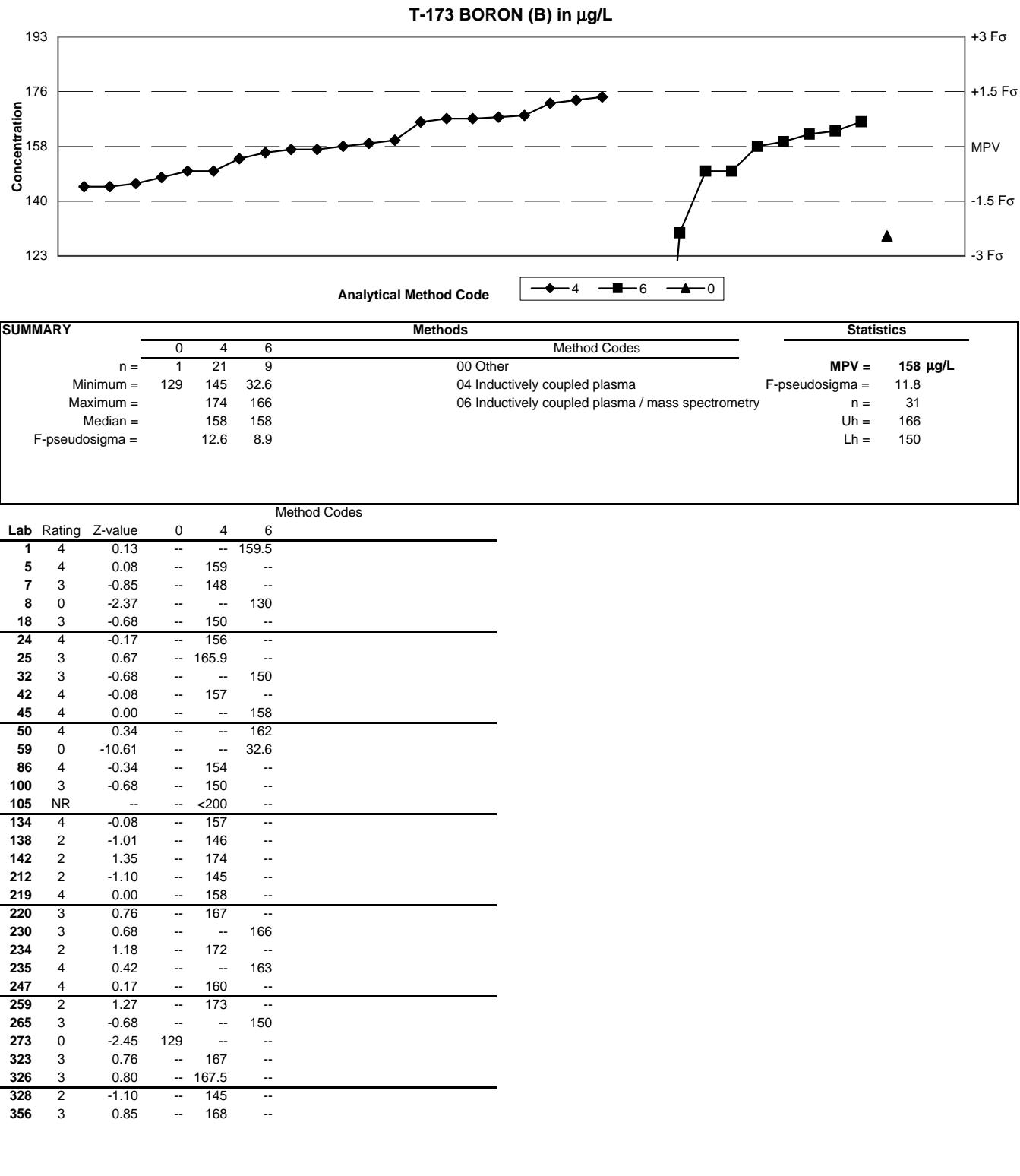
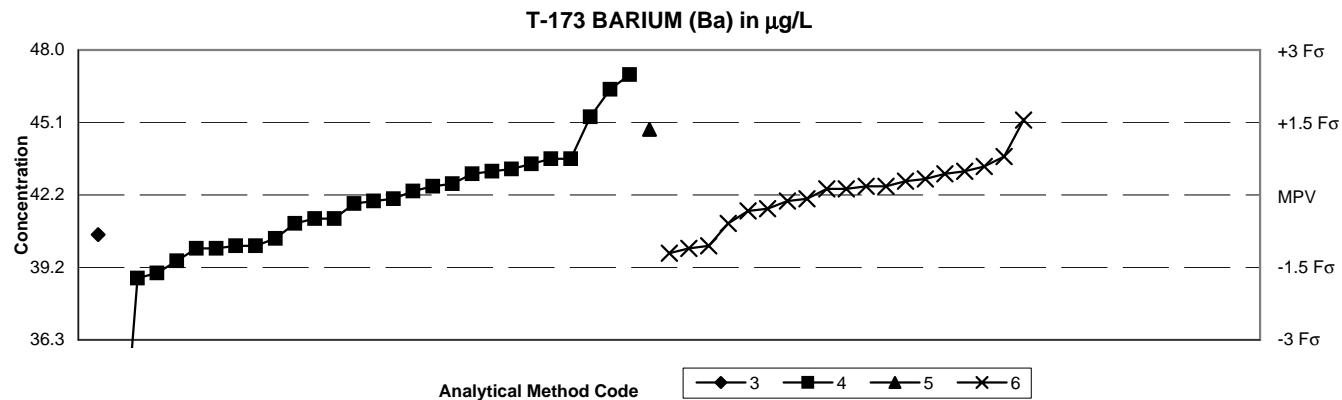
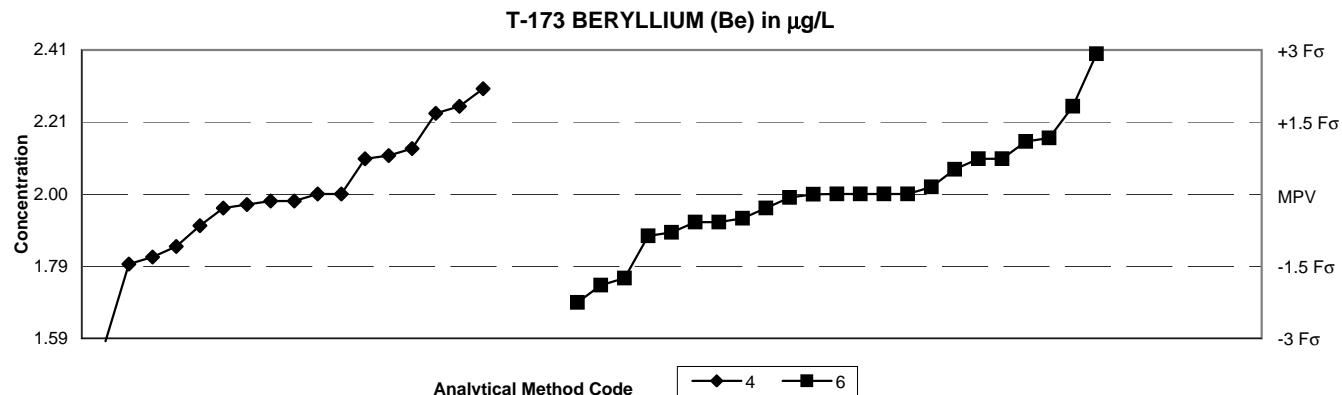


Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



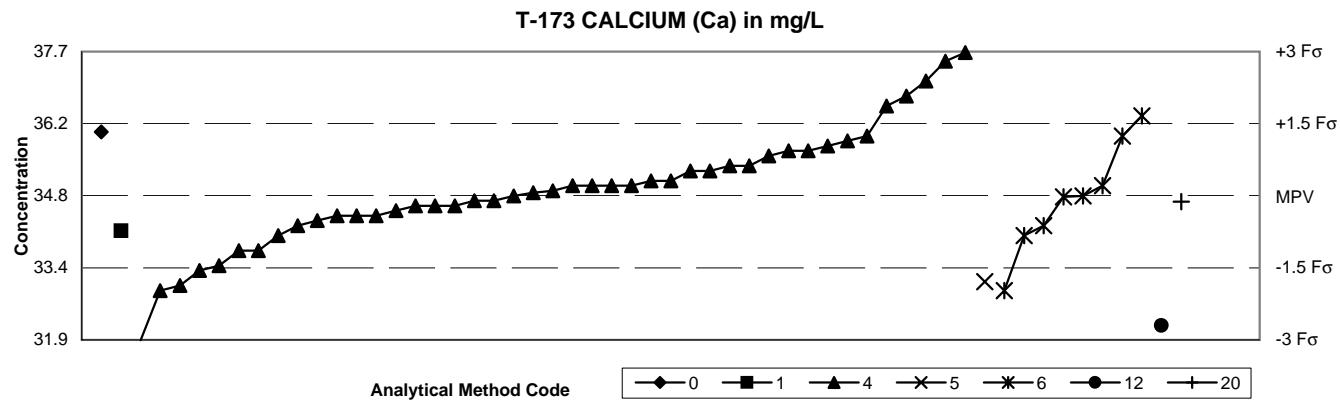
SUMMARY				Methods				Statistics			
				Method Codes							
				3	4	5	6				
n =	1	27	1	19				03 Atomic absorption: graphite furnace			
Minimum =	40.55	28.7	44.79	39.8				04 Inductively coupled plasma	F-pseudosigma =	1.95	
Maximum =		47		45.17				05 Direct current plasma	Rating criterion =	2.11	
Median =		41.9		42.4				06 Inductively coupled plasma / mass spectrometry	n =	48	
F-pseudosigma =		2.26		1.00					Uh =	43.1	
									Lh =	40.5	
Method Codes											
Lab	Rating	Z-value	3	4	5	6		Lab	Rating	Z-value	3
1	2	1.43	--	--	--	45.17		304	4	0.12	--
5	3	0.69	--	43.6	--	--		323	4	0.31	--
7	0	-6.38	--	28.7	--	--		326	4	0.17	--
8	4	0.45	--	--	--	43.1		328	4	0.40	--
16	2	-1.49	--	39	--	--		330	4	-0.12	--
18	1	-1.59	--	38.8	--	--		356	4	0.26	--
23	3	-0.83	--	40.4	--	--		379	4	-0.17	--
24	3	0.59	--	43.4	--	--		390	3	0.55	--
25	3	-0.97	--	40.1	--	--					43.3
32	4	-0.31	--	--	--	41.5					
33	2	1.25	--	--	44.79	--					
42	4	0.12	--	--	--	42.4					
45	2	-1.12	--	--	--	39.8					
46	3	-0.55	--	41	--	--					
50	4	-0.26	--	--	--	41.6					
59	4	0.17	--	--	--	42.5					
70	2	-1.02	--	--	--	40					
76	4	-0.07	--	--	--	42					
86	2	-1.26	--	39.5	--	--					
97	4	-0.45	--	41.2	--	--					
100	0	2.02	--	46.4	--	--					
105	0	2.30	--	47	--	--					
113	4	0.07	--	42.3	--	--					
134	4	-0.07	--	42	--	--					
138	3	-0.97	--	40.1	--	--					
142	4	0.40	--	--	--	43					
146	3	0.69	--	43.6	--	--					
149	3	-0.55	--	--	--	41					
180	3	-0.97	--	--	--	40.1					
183	3	-0.76	40.55	--	--	--					
212	2	1.49	--	45.3	--	--					
219	4	0.17	--	--	--	42.5					
220	4	-0.12	--	41.9	--	--					
230	3	0.74	--	--	--	43.7					
234	4	-0.45	--	41.2	--	--					
235	4	0.21	--	42.6	--	--					
247	2	-1.02	--	40	--	--					
259	4	0.50	--	43.2	--	--					
265	2	-1.02	--	40	--	--					
273	4	0.45	--	43.1	--	--					

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



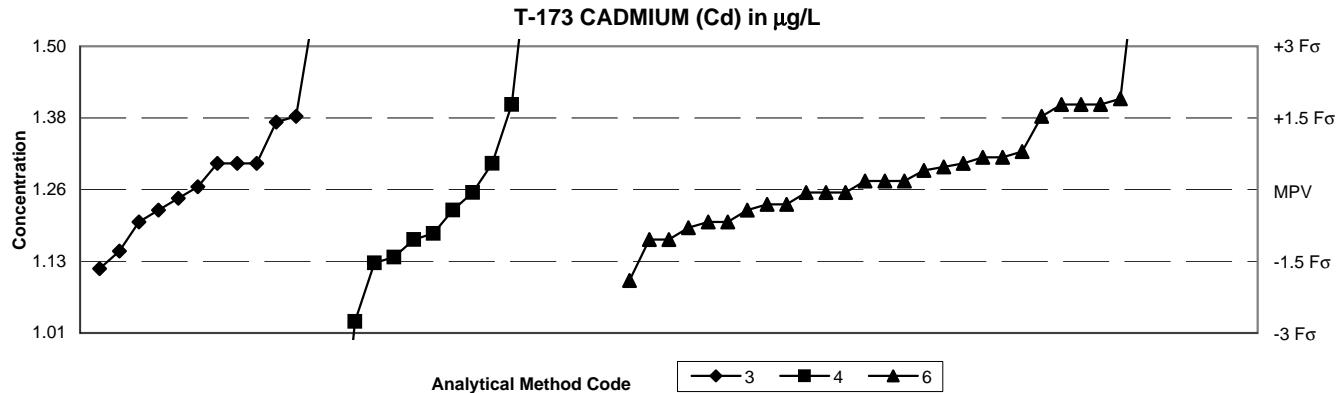
SUMMARY			Methods				Statistics		
			Method Codes		Method Codes				
			4	6	04 Inductively coupled plasma	06 Inductively coupled plasma / mass spectrometry			
n =	17	23					MPV =	2.00 $\mu\text{g/L}$	
Minimum =	1.58	1.69					F-pseudosigma =	0.137	
Maximum =	2.3	2.4					n =	40	
Median =	1.98	2.00					Uh =	2.10	
F-pseudosigma =	0.148	0.122					Lh =	1.92	
Method Codes									
Lab	Rating	Z-value	4	6	Lab	Rating	Z-value	4	6
1	4	-0.50	--	1.931	330	4	-0.07	--	1.99
5	4	-0.14	1.98	--	356	3	-0.87	--	1.88
7	3	0.51	--	2.07	379	2	-1.09	1.85	--
8	1	-1.75	--	1.76					
16	4	0.00	2	--					
18	4	-0.29	1.96	--					
23	4	-0.22	1.97	--					
25	2	-1.45	1.8	--					
32	4	0.00	--	2					
42	3	-0.80	--	1.89					
45	4	-0.29	--	1.96					
46	NR	--	<2.0	--					
50	2	1.10	--	2.15					
59	4	0.15	--	2.02					
70	3	0.73	--	2.1					
76	4	0.00	--	1.999					
86	2	-1.31	1.82	--					
97	1	1.68	2.23	--					
100	3	0.81	2.11	--					
105	4	0.00	2	--					
113	0	2.19	2.3	--					
134	3	0.73	2.1	--					
138	3	-0.65	1.91	--					
142	3	-0.58	--	1.92					
146	0	-3.06	1.58	--					
149	4	0.00	--	2					
180	0	-2.26	--	1.69					
212	2	1.17	--	2.16					
219	4	0.00	--	2					
230	3	0.73	--	2.1					
234	3	0.95	2.13	--					
235	1	-1.89	--	1.74					
247	NR	--	<10	--					
256	4	-0.14	1.98	--					
265	4	0.00	--	2					
273	1	1.83	2.25	--					
304	1	1.83	--	2.25					
323	0	2.92	--	2.4					
327	NR	--	<10	--					
328	3	-0.58	--	1.92					

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods								Statistics								
			Method Codes																
			0	1	4	5	6	12	20	Method Codes									
n =	1	1	43	1	8	1	1			00 Other									
Minimum =	36.08	34.1	31.9	33.08	32.9	32.2	34.68			01 Atomic absorption: direct, air	MPV = 34.8 mg/L								
Maximum =				37.67		36.4				04 Inductively coupled plasma	F-pseudosigma = 0.96								
Median =				34.9		34.8				05 Direct current plasma	Rating criterion = 1.74								
F-pseudosigma =				0.82		1.04				06 Inductively coupled plasma / mass spectrometry	n = 56								
										12 Flame emission	Uh = 35.5								
										20 Titration: colorimetric	Lh = 34.2								
Method Codes																			
Lab	Rating	Z-value	0	1	4	5	6	12	20	Lab	Rating	Z-value	0	1	4	5	6	12	20
1	4	0.34	--	--	35.4	--	--	--	--	234	4	0.00	--	--	34.8	--	--	--	--
5	4	0.29	--	--	35.3	--	--	--	--	235	4	0.29	--	--	35.3	--	--	--	--
7	3	-0.86	--	--	33.3	--	--	--	--	247	4	-0.46	--	--	34	--	--	--	--
8	4	-0.23	--	--	34.4	--	--	--	--	259	4	0.34	--	--	35.4	--	--	--	--
12	4	-0.11	--	--	34.6	--	--	--	--	265	4	-0.06	--	--	34.7	--	--	--	--
16	2	-1.03	--	--	33	--	--	--	--	273	4	-0.17	--	--	34.5	--	--	--	--
18	2	-1.09	--	--	32.9	--	--	--	--	274	4	-0.07	--	--	--	--	--	--	34.68
23	4	0.11	--	--	35	--	--	--	--	277	2	-1.49	--	--	--	--	--	--	32.2
24	3	-0.80	--	--	33.4	--	--	--	--	279	3	0.74	36.08	--	--	--	--	--	--
25	1	1.65	--	--	37.67	--	--	--	--	323	4	-0.11	--	--	34.6	--	--	--	--
30	3	0.69	--	--	--	--	36	--	--	326	4	0.17	--	--	35.1	--	--	--	--
32	4	-0.46	--	--	--	--	34	--	--	328	2	1.03	--	--	36.6	--	--	--	--
33	3	-0.99	--	--	--	33.08	--	--	--	330	3	0.57	--	--	35.8	--	--	--	--
42	3	-0.63	--	--	33.7	--	--	--	--	356	4	-0.23	--	--	34.4	--	--	--	--
45	4	0.00	--	--	--	--	34.8	--	--	386	1	-1.67	--	--	31.9	--	--	--	--
46	4	0.46	--	--	35.6	--	--	--	--	390	3	0.92	--	--	--	--	36.4	--	--
50	4	0.06	--	--	34.9	--	--	--	--										
59	4	-0.40	--	34.1	--	--	--	--	--										
64	4	0.11	--	--	35	--	--	--	--										
70	3	0.52	--	--	35.7	--	--	--	--										
76	4	-0.01	--	--	--	34.78	--	--	--										
86	4	0.17	--	--	35.1	--	--	--	--										
97	4	-0.34	--	--	34.2	--	--	--	--										
100	2	1.32	--	--	37.1	--	--	--	--										
105	1	1.55	--	--	37.5	--	--	--	--										
110	4	0.03	--	--	34.86	--	--	--	--										
113	4	0.11	--	--	35	--	--	--	--										
134	4	0.11	--	--	35	--	--	--	--										
138	4	-0.06	--	--	34.7	--	--	--	--										
142	3	0.63	--	--	35.9	--	--	--	--										
146	2	1.15	--	--	36.8	--	--	--	--										
149	4	-0.34	--	--	--	--	34.2	--	--										
180	4	-0.11	--	--	34.6	--	--	--	--										
190	3	0.52	--	--	35.7	--	--	--	--										
193	2	-1.09	--	--	--	32.9	--	--	--										
212	3	-0.63	--	--	33.7	--	--	--	--										
219	4	-0.29	--	--	34.3	--	--	--	--										
220	4	-0.23	--	--	34.4	--	--	--	--										
227	3	0.69	--	--	36	--	--	--	--										
230	4	0.11	--	--	--	35	--	--	--										

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods			Statistics		
			Method Codes					
			3	4	6			
n =	12	11	27	03 Atomic absorption: graphite furnace			MPV =	1.26 µg/L
Minimum =	1.12	0.68	1.1	04 Inductively coupled plasma			F-pseudosigma =	0.082
Maximum =	1.58	1.7	1.7	06 Inductively coupled plasma / mass spectrometry			n =	50
Median =	1.28	1.18	1.27				Uh =	1.31
F-pseudosigma =	0.093	0.104	0.067				Lh =	1.20
Method Codes								
Lab	Rating	Z-value	3	4	6	Lab	Rating	Z-value
1	4	0.40	--	--	1.288	235	1	1.90
5	4	-0.43	1.22	--	--	247	NR	--
7	1	1.53	--	--	1.38	256	0	-7.05
8	2	-1.04	--	--	1.17	259	4	-0.06
10	3	0.55	1.3	--	--	265	1	1.78
12	3	0.55	--	1.3	--	277	2	-1.29
16	0	5.46	--	--	1.7	304	3	0.67
18	NR	--	--	<3	--	307	3	0.55
23	0	-2.76	--	1.03	--	323	3	-0.67
24	NR	--	--	<10	--	326	1	1.78
25	NR	--	--	<8	--	328	4	0.18
32	4	-0.31	--	--	1.23	330	4	-0.06
42	0	-3.13	--	--	<1	356	3	0.67
45	2	-1.04	--	--	1.17	379	0	3.99
46	4	-0.18	1.24	--	--	390	3	0.80
50	4	-0.43	--	--	1.22			
59	4	0.18	--	--	1.27			
70	1	1.78	--	--	1.4			
76	4	0.48	--	--	1.294			
86	3	-0.92	--	1.18	--			
89	3	-0.67	1.2	--	--			
97	1	1.53	1.38	--	--			
100	3	0.55	1.3	--	--			
105	1	-1.90	--	--	1.1			
113	0	5.46	--	1.7	--			
134	1	-1.53	--	1.13	--			
138	4	0.18	--	--	1.27			
142	4	-0.31	--	--	1.23			
146	2	-1.41	--	1.14	--			
147	4	-0.06	--	--	1.25			
149	3	-0.67	--	--	1.2			
180	3	-0.80	--	--	1.19			
183	1	-1.66	1.12	--	--			
190	4	0.06	1.26	--	--			
193	2	1.41	1.37	--	--			
212	1	1.78	--	--	1.4			
219	4	-0.06	--	--	1.25			
227	4	-0.43	--	1.22	--			
230	3	0.55	--	--	1.3			
234	2	-1.04	--	1.17	--			

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued

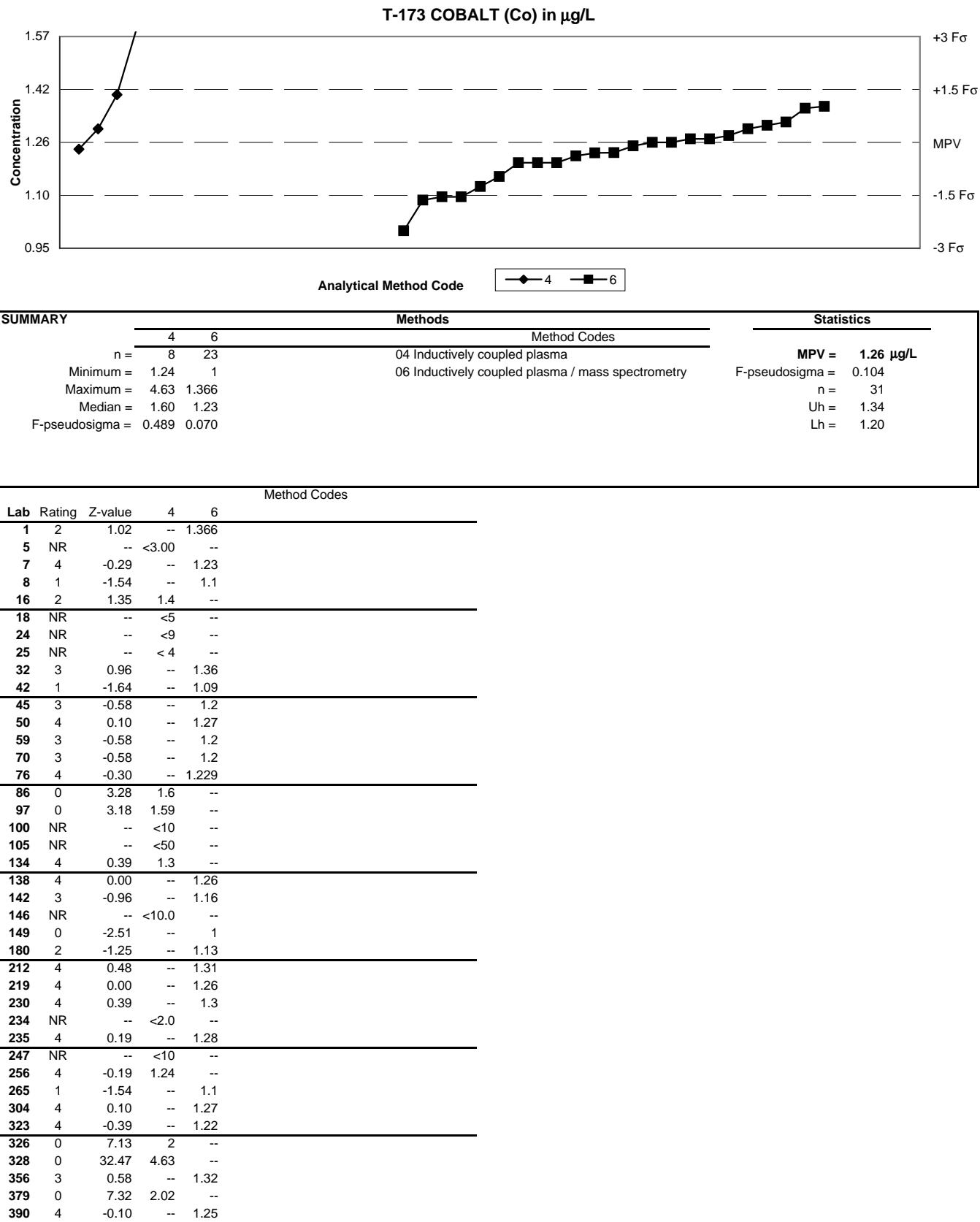
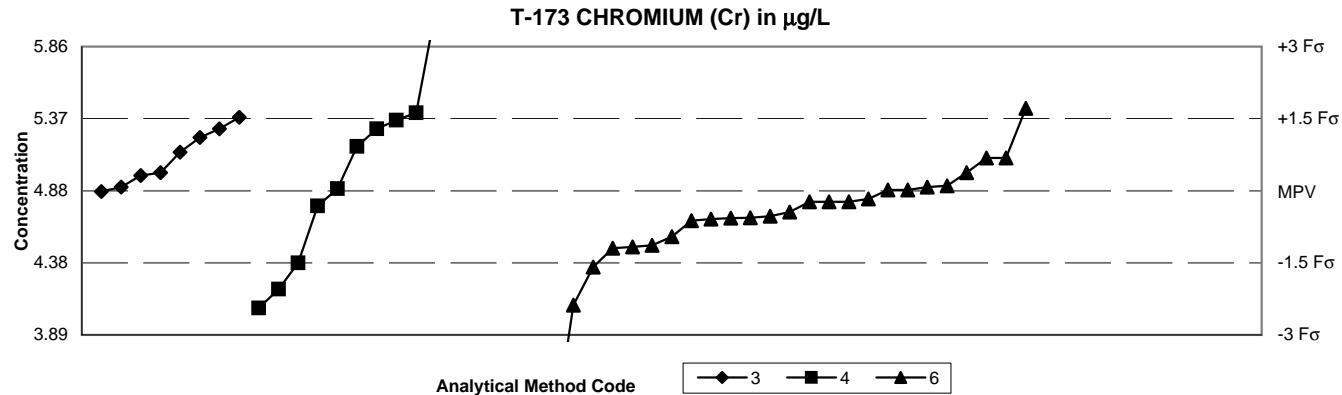


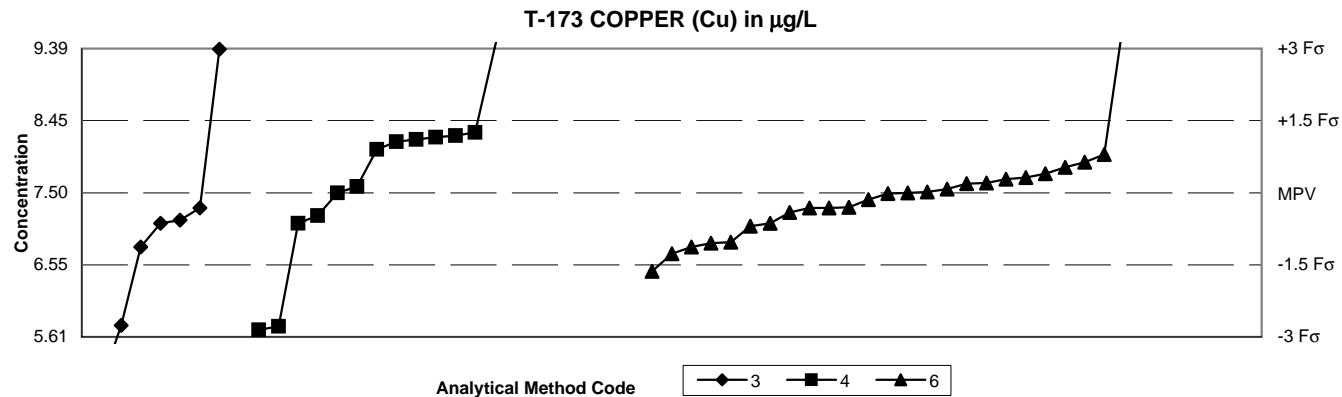
Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods			Statistics		
			Method Codes					
			3	4	6			
n =	8	11	25					
Minimum =	4.87	4.07	3.19	03 Atomic absorption: graphite furnace			MPV =	4.88 µg/L
Maximum =	5.38	6.8	5.44	04 Inductively coupled plasma			F-pseudosigma =	0.330
Median =	5.07	5.18	4.73	06 Inductively coupled plasma / mass spectrometry			n =	44
F-pseudosigma =	0.245	0.600	0.237				Uh =	5.12
							Lh =	4.68

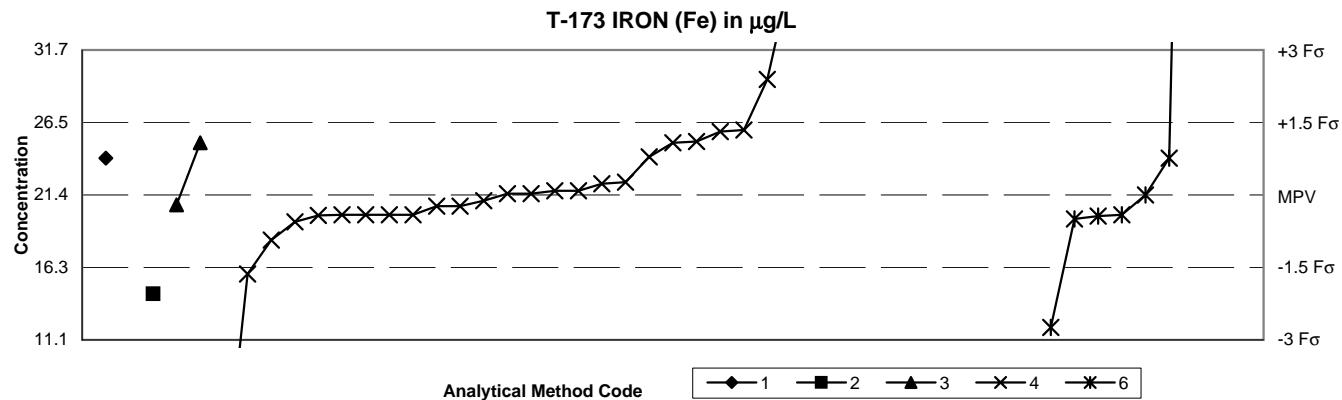
Method Codes						Method Codes					
Lab	Rating	Z-value	3	4	6	Lab	Rating	Z-value	3	4	6
1	4	-0.02	4.87	--	--	304	4	-0.17	--	--	4.82
5	0	5.84	--	6.8	--	307	3	0.80	5.14	--	--
7	3	-0.59	--	--	4.68	323	4	-0.23	--	--	4.8
8	4	0.02	--	--	4.88	328	4	0.08	--	--	4.9
10	4	0.38	5	--	--	330	1	1.71	--	--	5.44
16	2	1.29	--	5.3	--	356	4	-0.44	--	--	4.73
18	NR	--	--	<5	--	379	3	0.92	--	5.18	--
23	1	1.62	--	5.41	--	390	4	0.11	--	--	4.91
24	NR	--	--	<26	--						
25	NR	--	--	< 15	--						
32	2	-1.20	--	--	4.48						
42	3	-0.95	--	--	4.56						
45	3	-0.62	--	--	4.67						
46	2	1.29	5.3	--	--						
50	3	0.68	--	--	5.1						
59	3	-0.56	--	--	4.69						
70	4	-0.23	--	--	4.8						
76	3	-0.57	--	--	4.688						
97	2	1.11	5.24	--	--						
100	4	0.08	4.9	--	--						
105	3	0.68	--	--	5.1						
113	0	-2.05	--	4.2	--						
134	4	-0.32	--	4.77	--						
138	0	-5.11	--	--	3.19						
142	2	-1.17	--	--	4.49						
146	2	1.47	--	5.36	--						
149	4	0.38	--	--	5						
180	0	-2.38	--	--	4.09						
183	1	1.53	5.38	--	--						
190	0	-2.44	--	4.07	--						
212	1	-1.59	--	--	4.35						
219	2	-1.14	--	--	4.5						
230	4	-0.23	--	--	4.8						
234	0	3.77	--	6.12	--						
235	4	0.02	--	--	4.88						
247	NR	--	--	<10	--						
256	2	-1.50	--	4.38	--						
259	4	0.05	--	4.89	--						
265	3	-0.53	--	--	4.7						
277	4	0.32	4.98	--	--						

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



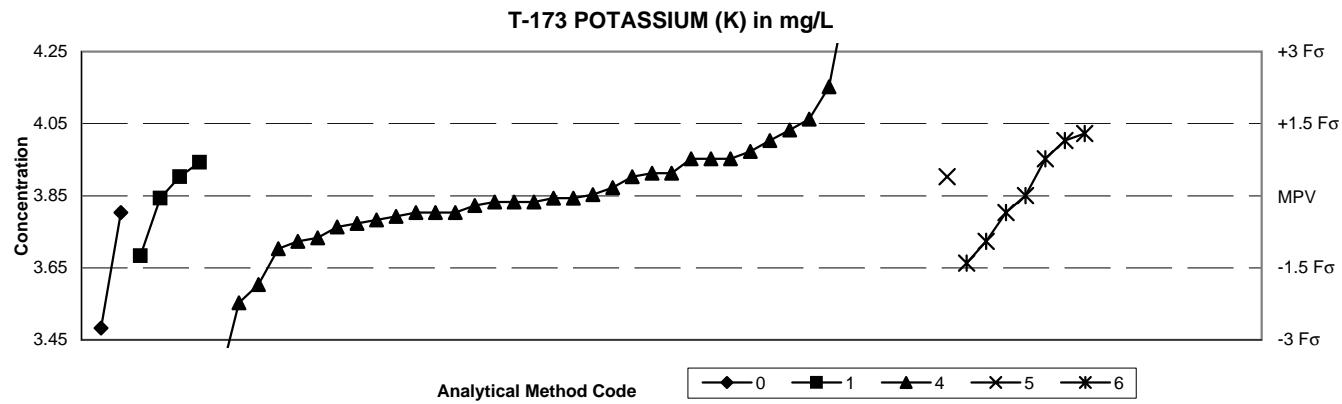
SUMMARY			Methods			Statistics		
			Method Codes					
			3	4	6			
n =			7	15	25	Method Codes		
Minimum =			5	5.7	6.47	03 Atomic absorption: graphite furnace		
Maximum =			9.38	11.2	9.8	04 Inductively coupled plasma		
Median =			7.10	8.17	7.49	06 Inductively coupled plasma / mass spectrometry		
F-pseudosigma =			0.701	0.682	0.430	MPV = 7.50 µg/L		
						F-pseudosigma = 0.630		
						n = 47		
						Uh = 7.95		
						Lh = 7.10		
Method Codes								
Lab	Rating	Z-value	3	4	6	Lab	Rating	Z-value
1	3	0.53	--	--	7.833	247	NR	--
5	3	0.90	--	8.07	--	256	NR	--
7	2	-1.13	--	--	6.79	265	2	-1.27
8	2	-1.03	--	--	6.85	277	0	-2.76
10	3	-0.63	7.1	--	--	304	4	0.40
12	2	1.11	--	8.2	--	307	2	-1.13
16	4	0.00	--	7.5	--	323	4	-0.32
18	0	-2.78	--	5.75	--	326	0	5.87
23	4	0.13	--	7.58	--	327	0	3.65
24	NR	--	--	<18	--	328	4	-0.41
25	0	3.02	--	9.4	--	330	4	0.32
32	4	0.29	--	--	7.68	356	4	-0.02
42	0	-2.86	--	5.7	--	379	2	1.06
45	3	-0.70	--	--	7.06	390	4	0.21
46	3	-0.57	7.14	--	--			
50	4	0.00	--	--	7.5			
59	4	0.19	--	--	7.62			
70	3	-0.63	--	--	7.1			
76	NR	--	--	--	<20.0			
89	0	-3.97	5	--	--			
97	2	1.25	--	8.29	--			
100	0	-3.97	--	<5	--			
105	NR	--	--	<10	--			
113	0	4.76	--	10.5	--			
134	4	-0.48	--	7.2	--			
138	4	-0.30	--	--	7.31			
142	1	-1.63	--	--	6.47			
146	3	-0.63	--	7.1	--			
147	4	0.08	--	--	7.55			
149	3	0.79	--	--	8			
180	2	-1.05	--	--	6.84			
183	0	2.98	9.38	--	--			
190	4	-0.32	7.3	--	--			
193	NR	--	<12.5	--	--			
212	4	0.02	--	--	7.51			
219	4	-0.32	--	--	7.3			
227	2	1.19	--	8.25	--			
230	3	0.63	--	--	7.9			
234	2	1.16	--	8.23	--			
235	4	-0.14	--	--	7.41			

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



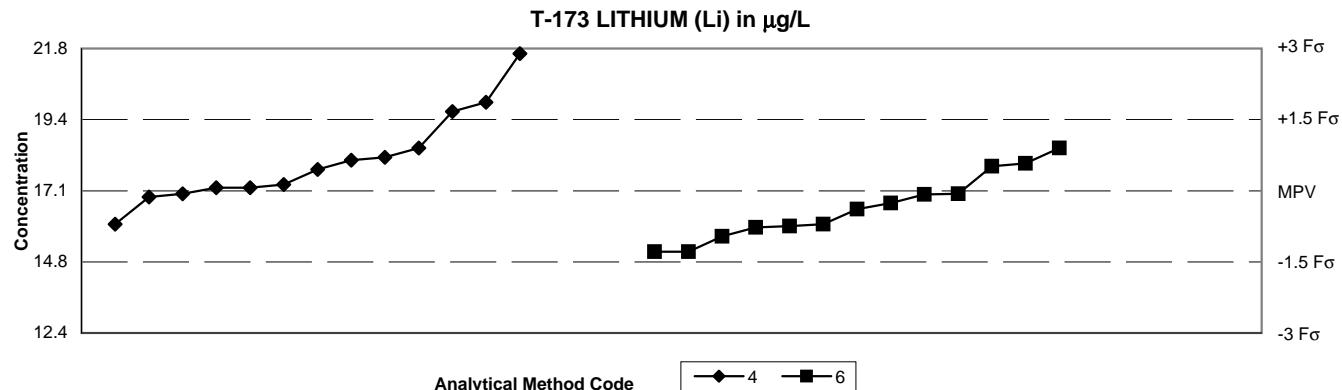
SUMMARY			Methods							Statistics					
			Method Codes												
			1	2	3	4	6	22	Method Codes						
n =	1	1	2	27	7	1	01	Atomic absorption: direct, air						MPV = 21.4 µg/L	
Minimum =	24	14.39	20.7	0.03	12	0.023	02	Atomic absorption: direct, nitrous oxide						F-pseudosigma = 3.43	
Maximum =			25.1	49.5	96		03	Atomic absorption: graphite furnace						n = 39	
Median =			21.5	20.0			04	Inductively coupled plasma						Uh = 24.6	
F-pseudosigma =			3.82	2.15			06	Inductively coupled plasma / mass spectrometry						Lh = 20.0	
							22	Colorimetric							
Method Codes															
Lab	Rating	Z-value	1	2	3	4	6	22	Lab	Rating	Z-value	1	2	3	Method Codes
1	3	-0.93	--	--	--	18.2	--	--	273	4	-0.42	--	--	--	19.95
5	2	1.08	--	--	--	25.1	--	--	277	2	1.08	--	--	--	25.1
7	NR	--	--	--	--	<20	--	--	307	NR	--	<100	--	--	--
8	NR	--	--	--	--	<50	--	--	323	NR	--	--	--	--	<50
10	3	0.76	24	--	--	--	--	--	326	0	5.83	--	--	--	41.4
12	4	-0.12	--	--	--	21	--	--	328	0	4.55	--	--	--	37
16	4	0.03	--	--	--	21.5	--	--	356	4	0.09	--	--	--	21.7
18	NR	--	--	--	--	<60	--	--	379	4	-0.41	--	--	--	20
21	0	-6.24	--	--	--	--	--	0.023	386	0	8.20	--	--	--	49.5
23	3	0.79	--	--	--	24.1	--	--	390	3	0.76	--	--	--	24
24	0	2.39	--	--	--	29.6	--	--							
25	4	-0.23	--	--	--	20.6	--	--							
30	0	21.76	--	--	--	--	96	--							
32	4	0.00	--	--	--	--	21.4	--							
42	0	-6.23	--	--	--	0.03	--	--							
45	4	-0.50	--	--	--	--	19.7	--							
46	NR	--	--	--	--	<300	--	--							
50	4	-0.44	--	--	--	--	19.9	--							
59	NR	--	--	--	--	--	< 50	--							
70	NR	--	--	--	--	<20	--	--							
100	4	0.03	--	--	--	21.5	--	--							
105	4	-0.41	--	--	--	20	--	--							
113	4	-0.41	--	--	--	20	--	--							
134	4	0.09	--	--	--	21.7	--	--							
138	4	0.26	--	--	--	22.3	--	--							
142	4	-0.41	--	--	--	20	--	--							
146	2	1.31	--	--	--	25.9	--	--							
149	NR	--	--	--	--	--	<60	--							
180	4	-0.23	--	--	--	20.6	--	--							
190	4	-0.20	--	--	20.7	--	--	--							
212	2	1.34	--	--	--	26	--	--							
219	NR	--	--	--	--	<20	--	--							
220	3	-0.55	--	--	--	19.5	--	--							
230	0	-2.74	--	--	--	--	12	--							
234	4	0.23	--	--	--	22.2	--	--							
235	2	1.11	--	--	--	25.2	--	--							
247	NR	--	--	--	--	<50	--	--							
256	0	-2.04	--	14.39	--	--	--	--							
259	1	-1.63	--	--	--	15.8	--	--							
265	4	-0.41	--	--	--	--	20	--							

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods						Statistics		
			0	1	4	5	6	12	Method Codes		
n =	2	4	37	1	7	2			00 Other		
Minimum =	3.48	3.68	3.33	3.9	3.66	4.33			01 Atomic absorption: direct, air	MPV = 3.85 mg/L	
Maximum =	3.8	3.94	9.41		4.02	4.92			04 Inductively coupled plasma	F-pseudosigma = 0.133	
Median =			3.84		3.85				05 Direct current plasma	Rating criterion = 0.192	
F-pseudosigma =			0.133		0.159				06 Inductively coupled plasma / mass spectrometry	n = 53	
									12 Flame emission	Uh = 3.97	
										Lh = 3.79	
Method Codes											
Lab	Rating	Z-value	0	1	4	5	6	12	Lab	Rating	Z-value
1	4	0.12	--	--	3.87	--	--	--	259	4	0.33
5	0	3.86	--	--	4.59	--	--	--	265	3	-0.76
7	3	0.95	--	--	4.03	--	--	--	273	3	0.54
8	4	-0.09	--	--	3.83	--	--	--	274	0	5.58
12	4	-0.24	--	--	3.8	--	--	--	277	0	2.51
16	3	0.80	--	--	4	--	--	--	279	4	-0.24
18	0	-2.69	--	--	3.33	--	--	--	323	4	-0.45
23	4	-0.04	--	--	3.84	--	--	--	326	0	5.32
24	4	0.02	--	--	3.85	--	--	--	328	0	4.07
25	4	-0.09	--	--	3.83	--	--	--	330	4	-0.04
32	3	0.54	--	--	--	--	3.95	--	356	4	0.33
33	4	0.28	--	--	--	3.9	--	--	386	2	-1.28
42	4	-0.14	--	--	3.82	--	--	--	390	3	0.90
45	3	-0.66	--	--	--	--	3.72	--			
46	4	-0.35	--	--	3.78	--	--	--			
50	3	-0.66	--	--	3.72	--	--	--			
59	4	-0.04	--	3.84	--	--	--				
64	4	0.48	--	3.94	--	--	--				
70	2	1.11	--	--	4.06	--	--	--			
76	4	0.00	--	--	--	--	3.847	--			
86	3	0.54	--	--	3.95	--	--	--			
100	3	0.64	--	--	3.97	--	--	--			
105	1	1.58	--	--	4.15	--	--	--			
110	3	-0.87	--	3.68	--	--	--	--			
113	4	-0.24	--	--	3.8	--	--	--			
134	4	0.28	--	3.9	--	--	--	--			
138	4	-0.40	--	--	3.77	--	--	--			
142	4	0.28	--	--	3.9	--	--	--			
146	0	3.03	--	--	4.43	--	--	--			
149	4	-0.24	--	--	--	--	3.8	--			
180	4	-0.30	--	--	3.79	--	--	--			
190	1	-1.91	3.48	--	--	--	--	--			
193	3	-0.97	--	--	--	--	3.66	--			
212	3	-0.61	--	--	3.73	--	--	--			
219	3	0.54	--	--	3.95	--	--	--			
220	4	-0.09	--	--	3.83	--	--	--			
230	3	0.80	--	--	--	--	4	--			
234	4	-0.24	--	--	3.8	--	--	--			
235	0	28.92	--	--	9.41	--	--	--			
247	1	-1.54	--	--	3.55	--	--	--			

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY		Methods		Statistics	
		4	6	Method Codes	
n =		13	13	04 Inductively coupled plasma	MPV = 17.1 µg/L
Minimum =		16	15.1	06 Inductively coupled plasma / mass spectrometry	F-pseudosigma = 1.56
Maximum =		21.6	18.5		n = 26
Median =		17.8	16.5		Uh = 18.1
F-pseudosigma =		0.96	0.82		Lh = 16.0

Lab	Rating	Z-value	Method Codes	
			4	6
1	3	-0.75	--	15.94
5	4	0.06	17.2	--
7	NR	--	<20	--
8	2	-1.28	--	15.1
25	3	-0.71	16	--
32	4	-0.06	--	17
42	4	-0.13	16.9	--
50	3	0.90	--	18.5
59	4	-0.26	--	16.7
76	4	-0.08	--	16.98
86	4	0.06	17.2	--
100	0	-10.95	<0.05	--
105	NR	--	<25	--
134	4	0.45	17.8	--
142	3	0.71	18.2	--
212	3	0.64	18.1	--
219	4	-0.39	--	16.5
230	3	0.58	--	18
234	1	1.67	19.7	--
235	2	-1.28	--	15.1
247	1	1.86	20	--
256	4	0.13	17.3	--
265	3	-0.71	--	16
273	3	0.90	18.5	--
304	3	-0.77	--	15.9
323	4	-0.06	17	--
326	0	2.89	21.6	--
328	3	-0.96	--	15.6
390	3	0.51	--	17.9

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued

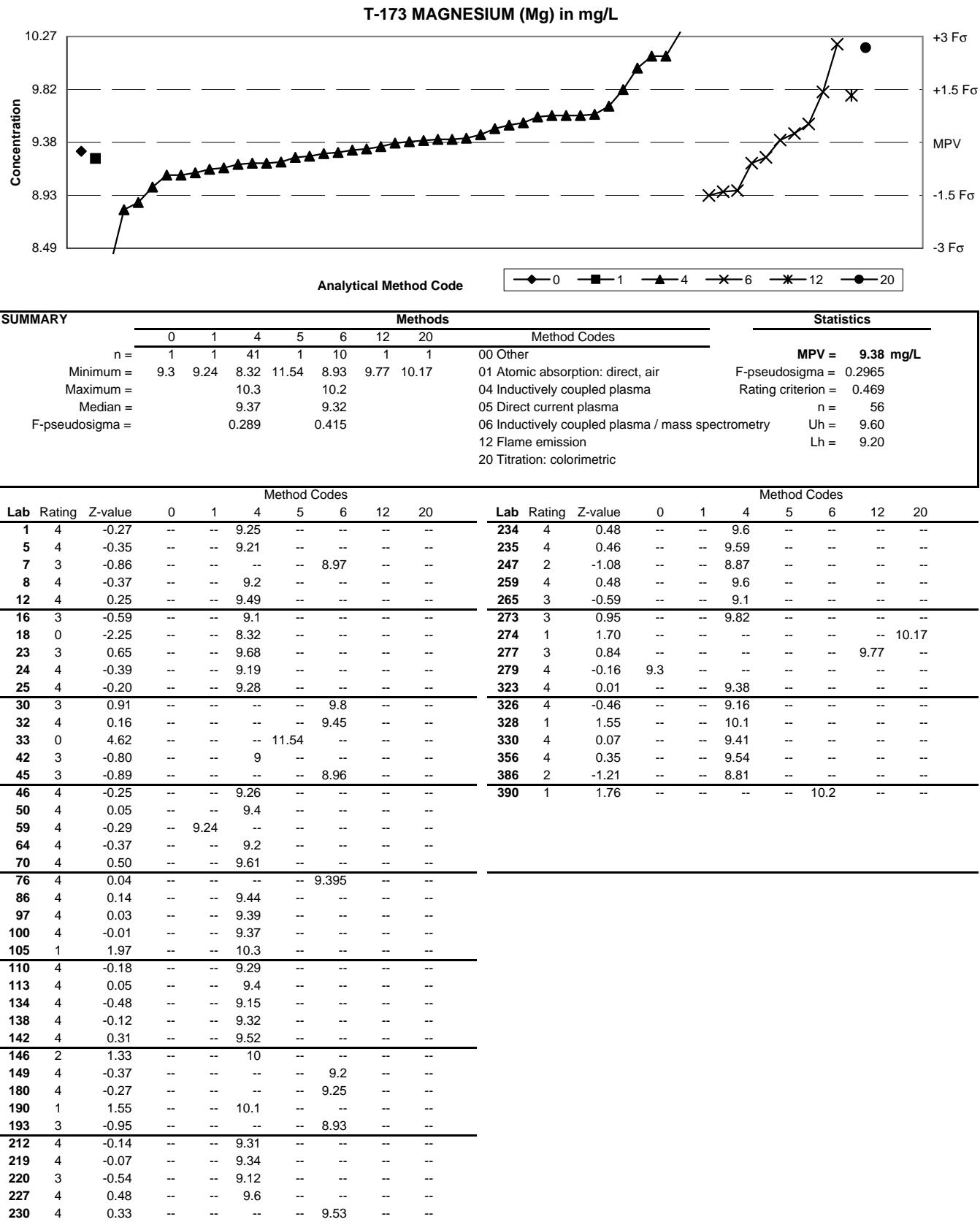
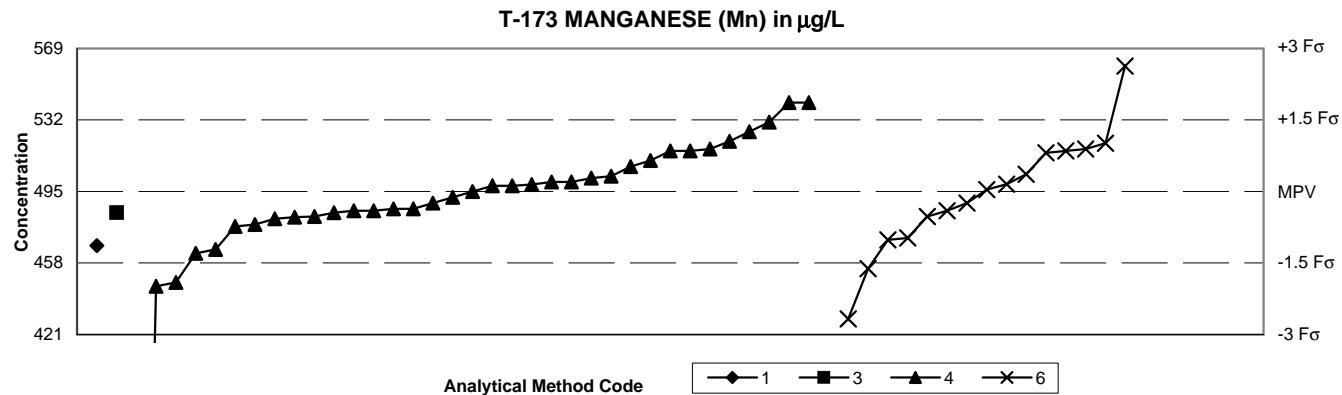
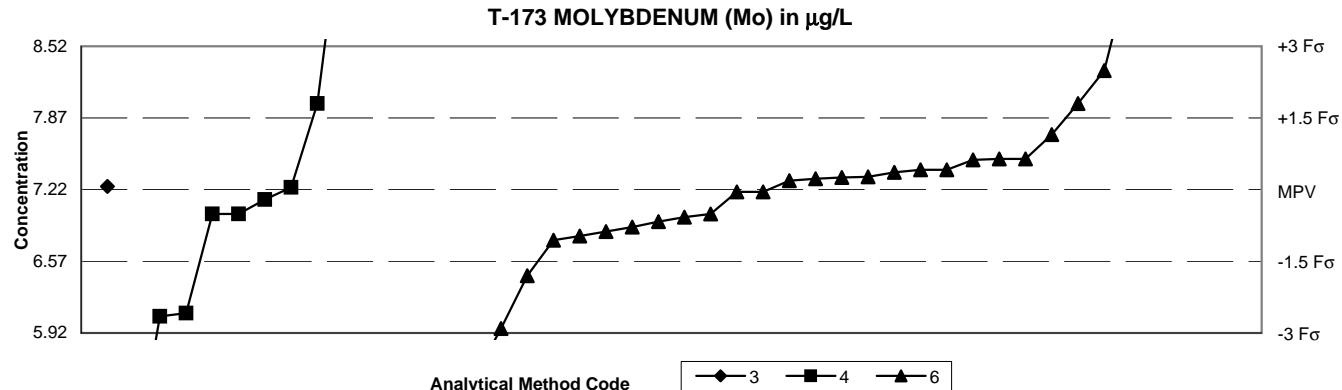


Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods						Statistics			
			1	3	4	5	6	Method Codes		MPV =	495 µg/L	
	n =		1	1	35	1	15	01	Atomic absorption: direct, air	F-pseudosigma =	24.7	
	Minimum =		467	484	0.499	631	429	03	Atomic absorption: graphite furnace	Rating criterion =	24.8	
	Maximum =				541	560		04	Inductively coupled plasma	n =	53	
	Median =				495	496		05	Direct current plasma	Uh =	515	
	F-pseudosigma =				20.5	28.9		06	Inductively coupled plasma / mass spectrometry	Lh =	482	
Method Codes												
Lab	Rating	Z-value	1	3	4	5	6	Lab	Rating	Z-value	1	
1	4	0.15	--	--	--	--	498.8	259	3	0.53	--	--
5	3	0.65	--	--	511	--	--	265	4	-0.40	--	--
7	3	-0.53	--	--	--	--	482	273	2	1.45	--	--
8	3	-0.73	--	--	477	--	--	304	4	-0.40	--	--
10	2	-1.13	467	--	--	--	--	307	4	-0.44	--	484
12	3	-0.53	--	--	482	--	--	323	4	0.12	--	--
16	3	-0.69	--	--	478	--	--	326	4	0.15	--	498.7
18	2	-1.21	--	--	465	--	--	328	1	1.86	--	541
23	4	-0.40	--	--	485	--	--	330	4	0.00	--	495
24	2	1.05	--	--	521	--	--	356	3	0.85	--	516
25	3	-0.54	--	--	481.7	--	--	379	4	-0.24	--	489
30	0	2.63	--	--	--	--	560	386	1	-1.90	--	448
32	3	0.81	--	--	--	--	515	390	3	0.89	--	--
33	0	5.49	--	--	--	631	--				517	
42	0	-19.98	--	--	0.499	--	--					
45	4	0.04	--	--	--	--	496					
46	4	0.28	--	--	502	--	--					
50	2	-1.01	--	--	--	--	470					
59	1	-1.62	--	--	--	--	455					
70	3	0.85	--	--	--	--	516					
86	4	-0.12	--	--	492	--	--					
97	4	-0.44	--	--	484	--	--					
100	3	0.85	--	--	516	--	--					
105	1	1.86	--	--	541	--	--					
113	4	-0.36	--	--	486	--	--					
134	4	0.20	--	--	500	--	--					
138	2	-1.29	--	--	463	--	--					
142	4	0.32	--	--	503	--	--					
146	2	1.25	--	--	526	--	--					
149	2	1.01	--	--	--	--	520					
180	0	-2.67	--	--	--	--	429					
190	3	0.89	--	--	517	--	--					
212	4	-0.36	--	--	486	--	--					
219	4	-0.24	--	--	--	--	489					
220	3	-0.57	--	--	481	--	--					
230	4	0.36	--	--	--	--	504					
234	4	0.12	--	--	498	--	--					
235	3	-0.97	--	--	--	--	471					
247	4	0.20	--	--	500	--	--					
256	1	-1.98	--	--	446	--	--					

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods			Statistics		
			3	4	6	Method Codes		
n =	1	9	26			03 Atomic absorption: graphite furnace	MPV =	7.22 µg/L
Minimum =	7.25	4.71	5.52			04 Inductively coupled plasma	F-pseudosigma =	0.434
Maximum =						06 Inductively coupled plasma / mass spectrometry	n =	36
Median =	7.00	7.31					Uh =	7.45
F-pseudosigma =	0.845	0.452					Lh =	6.86

Lab	Rating	Z-value	Method Codes		
			3	4	6
1	4	0.27	--	--	7.336
5	NR	--	--	<10.0	--
7	0	-2.91	--	--	5.96
8	4	-0.05	--	--	7.2
12	1	1.80	--	8	--
16	4	-0.51	--	7	--
23	0	6.11	--	9.87	--
24	NR	--	--	<17	--
32	3	-0.97	--	--	6.8
42	2	-1.06	--	--	6.76
45	3	-0.88	--	--	6.84
50	3	-0.78	--	--	6.88
59	1	-1.80	--	--	6.44
70	4	0.42	--	--	7.4
76	4	0.36	--	--	7.377
97	0	-5.79	--	4.71	--
100	NR	--	--	<25	--
105	1	1.80	--	--	8
113	0	-2.58	--	6.1	--
134	4	-0.51	--	7	--
138	0	-3.92	--	--	5.52
142	3	-0.58	--	--	6.97
146	4	-0.21	--	7.13	--
149	4	-0.51	--	--	7
180	2	1.15	--	--	7.72
183	4	0.07	7.25	--	--
212	3	-0.67	--	--	6.93
219	0	2.49	--	--	8.3
230	4	0.42	--	--	7.4
234	0	-2.65	--	6.07	--
235	4	0.23	--	--	7.32
247	NR	--	--	<40	--
259	4	0.05	--	7.24	--
265	3	0.65	--	--	7.5
304	4	-0.05	--	--	7.2
323	3	0.65	--	--	7.5
328	0	4.66	--	--	9.24
330	4	0.18	--	--	7.3
356	4	0.25	--	--	7.33
390	3	0.62	--	--	7.49

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued

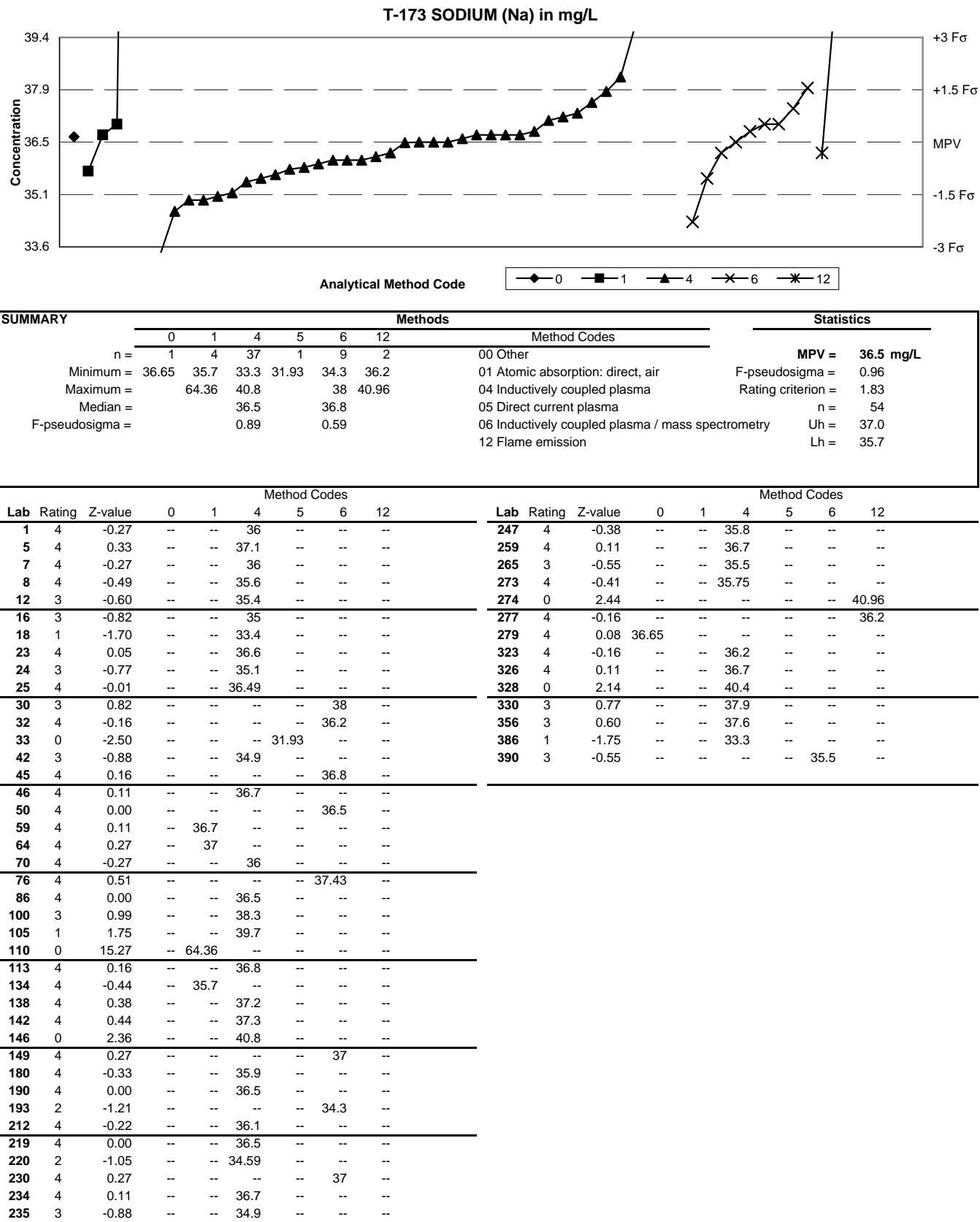
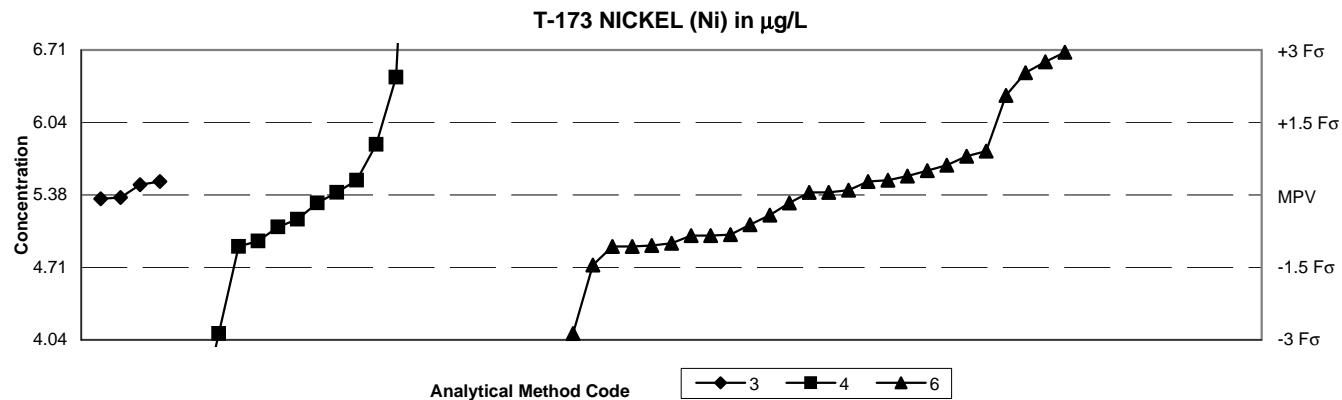
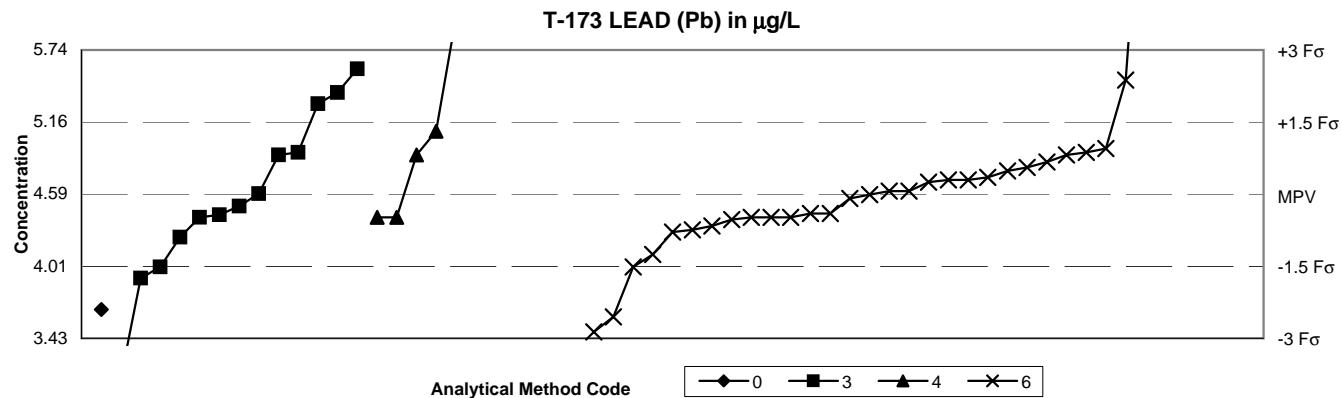


Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods			Statistics		
			Method Codes					
n =	4	12	3	4	6	MPV =	5.38 $\mu\text{g/L}$	
Minimum =	5.34	3.3	4.1	03 Atomic absorption: graphite furnace		F-pseudosigma =	0.445	
Maximum =	5.5	9.9	6.689	04 Inductively coupled plasma		n =	42	
Median =		5.23	5.40	06 Inductively coupled plasma / mass spectrometry		Uh =	5.60	
F-pseudosigma =	0.556	0.482				Lh =	5.00	
Method Codes								
Lab	Rating	Z-value	3	4	6	Lab	Rating	Z-value
1	0	2.95	--	--	6.689	277	4	-0.08
5	NR	--	--	<10.0	--	304	4	0.39
7	4	-0.17	--	--	5.3	307	4	0.28
8	4	0.28	--	--	5.5	323	2	-1.07
12	2	-1.07	--	4.9	--	326	4	-0.17
16	2	-1.07	--	--	4.9	328	3	0.80
18	NR	--	--	<5	--	330	0	2.06
23	3	-0.66	--	5.08	--	356	4	0.51
24	NR	--	--	<16	--	379	0	2.44
25	0	10.17	--	9.9	--	390	3	-0.62
32	0	2.53	--	--	6.5			
42	3	-1.00	--	--	4.93			
45	2	-1.05	--	--	4.91			
46	NR	--	--	<50	--			
50	3	0.62	--	--	5.65			
59	4	0.30	--	--	5.51			
70	0	2.75	--	--	6.6			
76	4	-0.42	--	--	5.188			
97	2	1.05	--	5.84	--			
100	NR	--	--	<15	--			
105	NR	--	--	<50	--			
113	0	-4.67	--	3.3	--			
134	4	0.06	--	5.4	--			
138	4	0.10	--	--	5.42			
142	4	0.06	--	--	5.4			
146	4	-0.51	--	5.15	--			
149	3	-0.84	--	--	5			
180	3	-0.82	--	--	5.01			
183	4	-0.06	5.35	--	--			
190	4	0.21	5.47	--	--			
193	NR	--	<12.5	--	--			
212	2	-1.45	--	--	4.73			
219	4	0.06	--	--	5.4			
230	0	-2.87	--	--	4.1			
234	4	0.30	--	5.51	--			
235	3	0.91	--	--	5.78			
247	NR	--	--	<50	--			
256	0	-2.87	--	4.1	--			
259	3	-0.96	--	4.95	--			
265	3	-0.84	--	--	5			

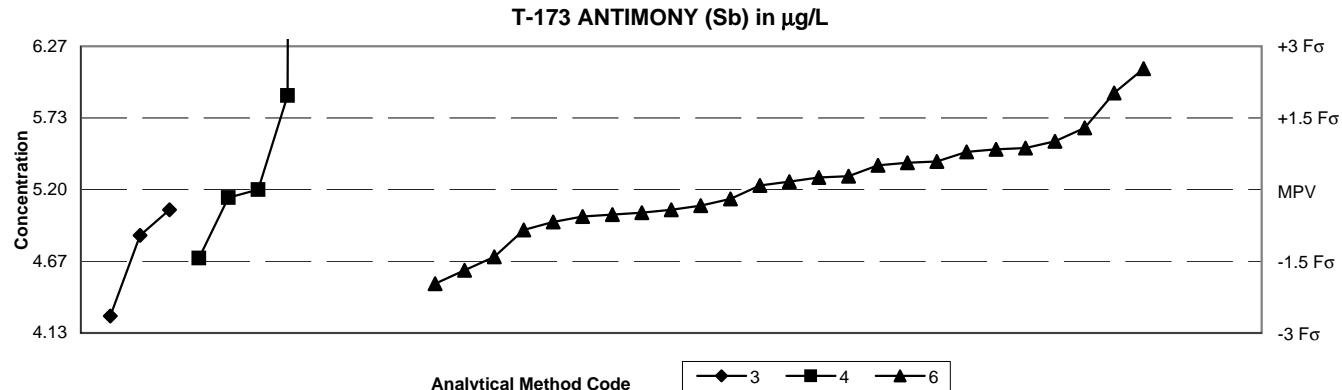
Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY		Methods				Statistics	
		0	3	4	6	Method Codes	
n =		1	13	7	29	00 Other	MPV = 4.59 $\mu\text{g/L}$
Minimum =		3.66	3.11	4.4	3.48	03 Atomic absorption: graphite furnace	F-pseudosigma = 0.385
Maximum =		5.59	55	7.65		04 Inductively coupled plasma	n = 50
Median =		4.49	5.09	4.58		06 Inductively coupled plasma / mass spectrometry	Uh = 4.90
F-pseudosigma =		0.504	1.11	0.289			Lh = 4.38

Lab	Rating	Z-value	Method Codes				Method Codes			
			0	3	4	6	0	3	4	6
1	3	-0.79	--	--	--	4.28	247	NR	--	--
5	4	-0.43	--	4.42	--	--	256	2	1.31	--
7	3	-0.66	--	--	--	4.33	259	3	0.82	--
8	4	-0.48	--	--	--	4.4	265	4	-0.48	--
10	1	-1.52	--	4	--	--	277	0	2.61	--
12	0	3.67	--	--	6	--	304	3	0.95	--
16	4	0.30	--	--	--	4.7	307	1	1.88	--
18	0	7.95	--	--	--	7.65	323	3	0.82	--
23	0	130.79	--	--	55	--	326	4	-0.48	--
24	NR	--	--	--	<43	--	328	4	0.06	--
25	NR	--	--	--	<20	--	330	4	0.06	--
32	4	-0.09	--	--	--	4.55	356	0	2.37	--
42	0	-2.87	--	--	--	3.48	379	0	-2.40	3.66
45	3	-0.74	--	--	--	4.3	390	4	-0.01	--
46	3	0.87	--	4.92	--	--				4.58
50	4	0.25	--	--	--	4.68				
59	4	-0.40	--	--	--	4.43				
70	4	-0.48	--	--	--	4.4				
76	3	0.67	--	--	--	4.843				
89	3	-0.90	--	4.24	--	--				
97	1	-1.75	--	3.91	--	--				
100	4	-0.25	--	4.49	--	--				
105	3	0.56	--	--	--	4.8				
113	3	0.82	--	4.9	--	--				
134	4	-0.48	--	--	4.4	--				
138	3	-0.53	--	--	--	4.38				
142	0	-2.56	--	--	--	3.6				
146	0	4.45	--	--	6.3	--				
147	4	0.35	--	--	--	4.72				
149	1	-1.52	--	--	--	4				
180	4	-0.40	--	--	--	4.43				
183	0	-3.83	--	3.11	--	--				
190	4	-0.48	--	4.4	--	--				
193	0	2.11	--	5.4	--	--				
212	4	0.48	--	--	--	4.77				
219	2	-1.26	--	--	--	4.1				
227	NR	--	--	--	<4.70	--				
230	4	0.30	--	--	--	4.7				
234	4	0.01	--	4.59	--	--				
235	3	0.87	--	--	--	4.92				

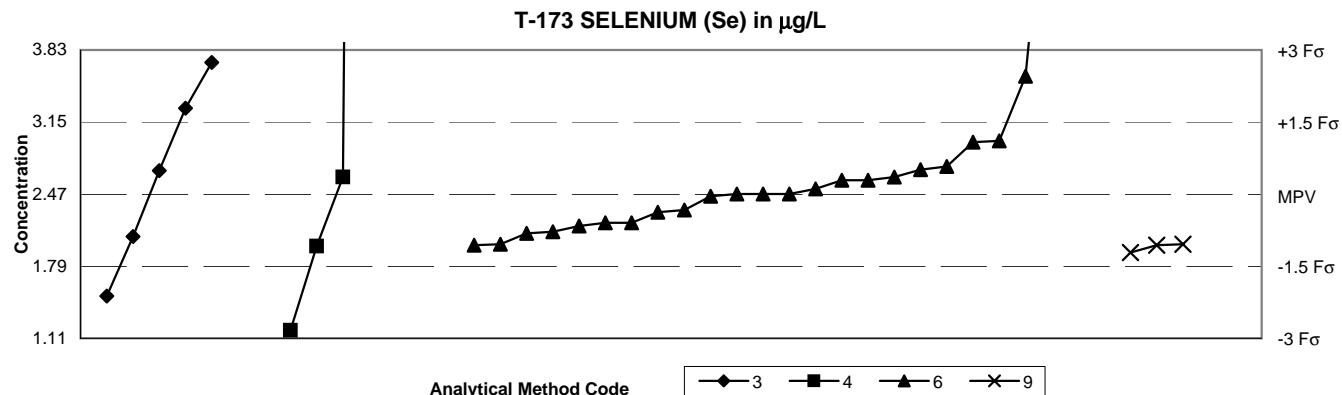
Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods			Statistics		
			3	4	6	Method Codes		
n =	3	5	25			03 Atomic absorption: graphite furnace	MPV =	5.20 µg/L
Minimum =	4.26	4.69	4.5			04 Inductively coupled plasma	F-pseudosigma =	0.356
Maximum =	5.05	220	6.1			06 Inductively coupled plasma / mass spectrometry	n =	33
Median =		5.20	5.26				Uh =	5.48
F-pseudosigma =		0.563	0.346				Lh =	5.00

Lab	Rating	Z-value	Method Codes		
			3	4	6
1	3	-0.53	--	--	5.013
5	NR	--	--	<20.0	--
7	4	0.25	--	--	5.29
8	1	-1.97	--	--	4.5
16	4	0.00	--	5.2	--
18	0	2.02	--	--	5.92
23	0	603.68	--	220	--
25	NR	--	--	< 50	--
32	3	-0.84	--	--	4.9
42	3	-0.67	--	--	4.96
45	1	-1.69	--	--	4.6
50	4	-0.34	--	--	5.08
59	3	0.59	--	--	5.41
70	0	2.53	--	--	6.1
76	4	-0.48	--	--	5.029
97	0	-2.64	4.26	--	--
100	4	-0.42	5.05	--	--
105	3	0.56	--	--	5.4
134	3	-0.96	4.86	--	--
138	4	0.51	--	--	5.38
142	3	0.87	--	--	5.51
146	1	1.97	--	5.9	--
149	2	-1.41	--	--	4.7
180	2	1.01	--	--	5.56
212	4	0.08	--	--	5.23
219	3	0.79	--	--	5.48
234	4	-0.17	--	5.14	--
235	2	1.29	--	--	5.66
247	NR	--	--	<200	--
256	2	-1.43	--	4.69	--
265	3	-0.56	--	--	5
304	4	-0.20	--	--	5.13
323	4	0.28	--	--	5.3
328	3	0.84	--	--	5.5
330	4	-0.42	--	--	5.05
356	4	0.17	--	--	5.26

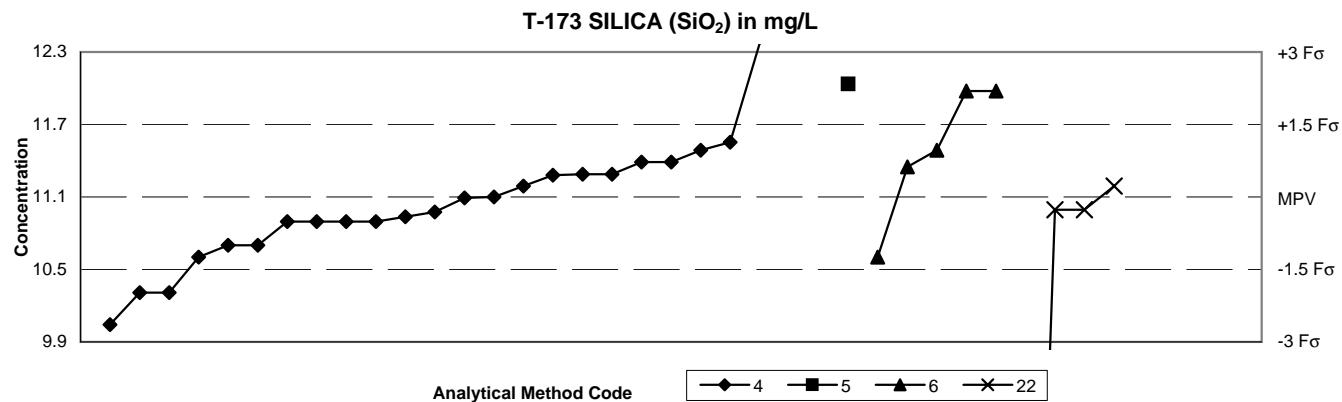
Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY		Methods				Statistics	
		3	4	6	9	Method Codes	
n =		5	4	23	3	03 Atomic absorption: graphite furnace	MPV = 2.47 µg/L
Minimum =		1.51	1.19	1.99	1.92	04 Inductively coupled plasma	F-pseudosigma = 0.452
Maximum =		3.71	32.1	6.1	2	06 Inductively coupled plasma / mass spectrometry	n = 35
Median =		2.69		2.47		09 Atomic fluorescence	Uh = 2.70
F-pseudosigma =		0.897		0.345			Lh = 2.09

Lab	Rating	Z-value	Method Codes				Method Codes			
			3	4	6	9	3	4	6	9
1	3	-0.78	--	--	2.116	--				
5	0	-2.12	1.51	--	--	--				
7	3	-0.82	--	--	2.1	--				
8	3	-0.60	--	--	2.2	--				
10	2	-1.04	--	--	--	2				
16	0	8.03	--	--	6.1	--				
18	2	-1.06	--	--	1.99	--				
23	0	-2.83	--	1.19	--	--				
25	NR	--	--	< 16	--	--				
32	0	2.45	--	--	3.58	--				
42	4	0.51	--	--	2.7	--				
45	3	-0.66	--	--	2.17	--				
50	4	0.00	--	--	2.47	--				
59	3	0.57	--	--	2.73	--				
70	4	0.29	--	--	2.6	--				
97	NR	--	< 1.78	--	--	--				
100	4	0.49	2.69	--	--	--				
105	NR	--	--	--	< 7	--				
134	4	0.35	--	2.63	--	--				
138	4	0.00	--	--	2.47	--				
142	4	0.35	--	--	2.63	--				
146	NR	--	--	< 10.0	--	--				
149	NR	--	--	--	< 3	--				
180	4	0.00	--	--	2.47	--				
190	3	-0.88	2.07	--	--	--				
212	4	-0.33	--	--	2.32	--				
219	3	-0.60	--	--	2.2	--				
230	4	0.29	--	--	2.6	--				
234	NR	--	< 5.0	--	--	--				
235	2	-1.06	--	--	--	1.99				
247	NR	--	--	< 100	--	--				
256	2	-1.22	--	--	--	1.92				
259	2	-1.08	--	1.98	--	--				
265	4	-0.38	--	--	2.3	--				
273	0	65.53	--	32.1	--	--				
304	4	0.11	--	--	2.52	--				
307	1	1.79	3.28	--	--	--				
323	2	-1.04	--	--	2	--				
328	4	-0.04	--	--	2.45	--				
330	2	1.11	--	--	2.97	--				

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY				Methods				Statistics			
				Method Codes							
				4	5	6	22	04	05	06	22
n =	25	1	5	4				Inductively coupled plasma			
Minimum =	10.03	12.06	10.6	3.95				Direct current plasma			
Maximum =	22.5		12	11.2				Inductively coupled plasma / mass spectrometry			
Median =	11.1		11.5					Colorimetric			
F-pseudosigma =	0.37		0.47								

Lab	Rating	Z-value	Method Codes			
			4	5	6	22
1	4	-0.37	10.9	--	--	--
5	3	0.53	11.4	--	--	--
7	1	-1.94	10.03	--	--	--
8	3	-0.91	10.6	--	--	--
24	3	0.53	11.4	--	--	--
25	3	0.83	11.57	--	--	--
30	1	1.61	--	--	12	--
32	3	0.71	--	--	11.5	--
33	1	1.72	--	12.06	--	--
42	2	-1.45	10.3	--	--	--
45	3	-0.91	--	--	10.6	--
50	3	-0.73	10.7	--	--	--
64	4	-0.37	10.9	--	--	--
70	4	0.17	--	--	--	11.2
100	0	3.05	12.8	--	--	--
105	4	0.00	11.11	--	--	--
110	4	-0.23	10.98	--	--	--
134	4	-0.30	10.94	--	--	--
142	3	0.71	11.5	--	--	--
190	4	-0.19	--	--	--	11
212	4	0.35	11.3	--	--	--
219	4	0.33	11.29	--	--	--
230	1	1.61	--	--	12	--
234	4	0.35	11.3	--	--	--
235	0	2.33	12.4	--	--	--
256	3	-0.73	10.7	--	--	--
259	4	0.17	11.2	--	--	--
265	2	-1.45	10.3	--	--	--
274	0	-12.89	--	--	--	3.95
323	4	-0.37	10.9	--	--	--
327	4	-0.19	--	--	--	11
328	4	-0.01	11.1	--	--	--
356	4	-0.37	10.9	--	--	--
386	0	20.51	22.5	--	--	--
390	4	0.46	--	--	11.36	--

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued

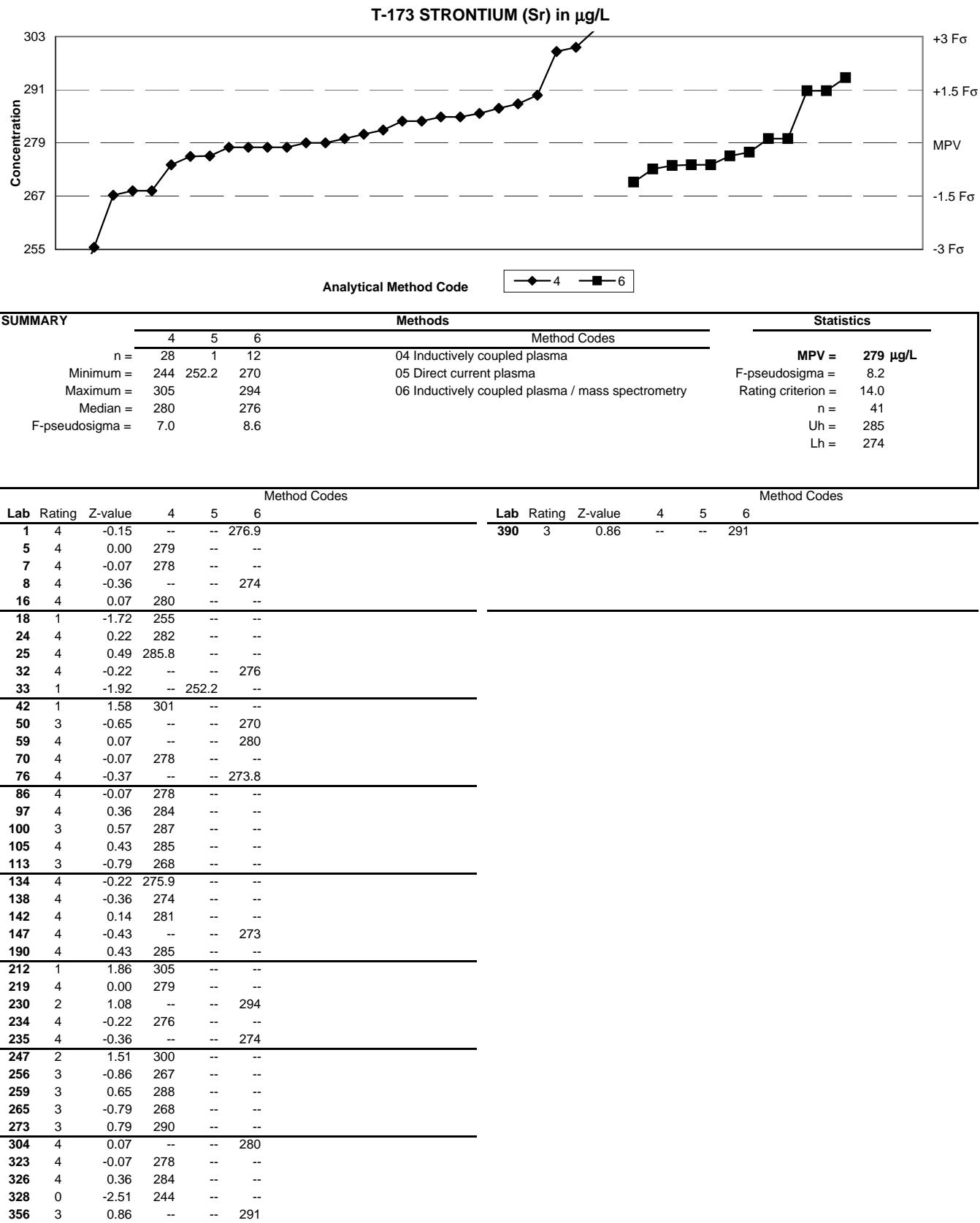
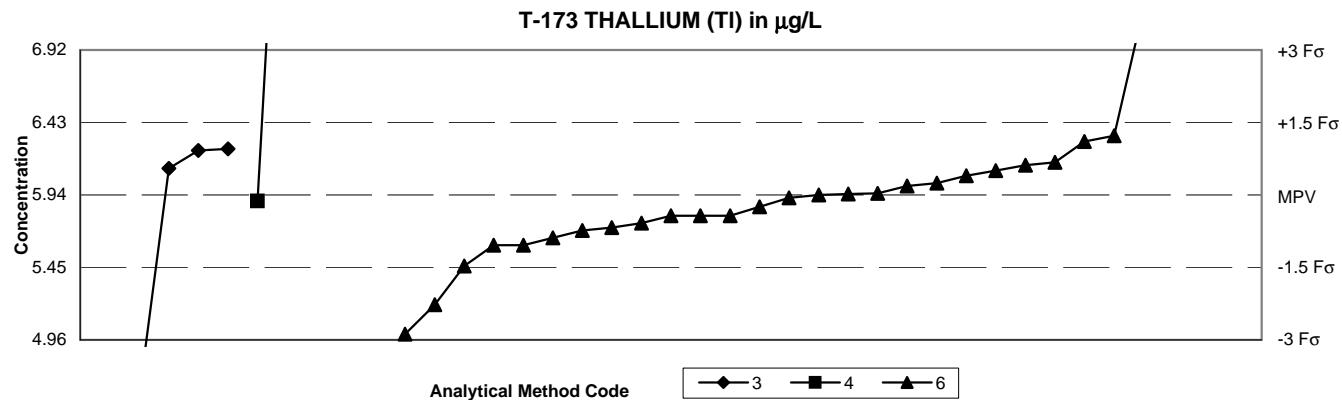


Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods			Statistics		
			3	4	6	Method Codes		
n =	5	3	27			03 Atomic absorption: graphite furnace	MPV =	5.94 $\mu\text{g/L}$
Minimum =	4.43	5.9	5			04 Inductively coupled plasma	F-pseudosigma =	0.326
Maximum =	6.25	110	9.66			06 Inductively coupled plasma / mass spectrometry	n =	35
Median =	6.12		5.92				Uh =	6.15
F-pseudosigma =	1.22		0.280				Lh =	5.71

Lab	Rating	Z-value	Method Codes		
			3	4	6
1	4	0.02	--	--	5.946
7	2	-1.47	--	--	5.46
8	3	-0.74	--	--	5.7
16	4	-0.43	--	--	5.8
18	0	11.41	--	--	9.66
23	0	319.04	--	110	--
25	NR	--	--	< 51	--
32	2	-1.04	--	--	5.6
42	4	0.25	--	--	6.02
45	3	-0.67	--	--	5.72
50	3	-0.58	--	--	5.75
59	4	0.03	--	--	5.95
70	2	-1.04	--	--	5.6
76	4	0.51	--	--	6.105
97	3	0.95	6.25	--	--
100	0	-4.63	4.43	--	--
105	4	0.18	--	--	6
113	0	-4.11	4.6	--	--
134	3	0.55	6.12	--	--
138	3	0.67	--	--	6.16
142	4	-0.43	--	--	5.8
146	4	-0.12	--	5.9	--
149	0	-2.88	--	--	5
180	3	-0.89	--	--	5.65
212	2	1.23	--	--	6.34
219	0	-2.27	--	--	5.2
230	2	1.10	--	--	6.3
234	3	0.92	6.24	--	--
235	4	0.40	--	--	6.07
247	NR	--	--	<50	--
265	4	-0.43	--	--	5.8
304	4	-0.25	--	--	5.86
323	3	0.61	--	--	6.14
328	4	0.00	--	--	5.94
330	4	-0.06	--	--	5.92
356	0	3.86	--	--	7.2
379	0	10.67	--	9.42	--

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued

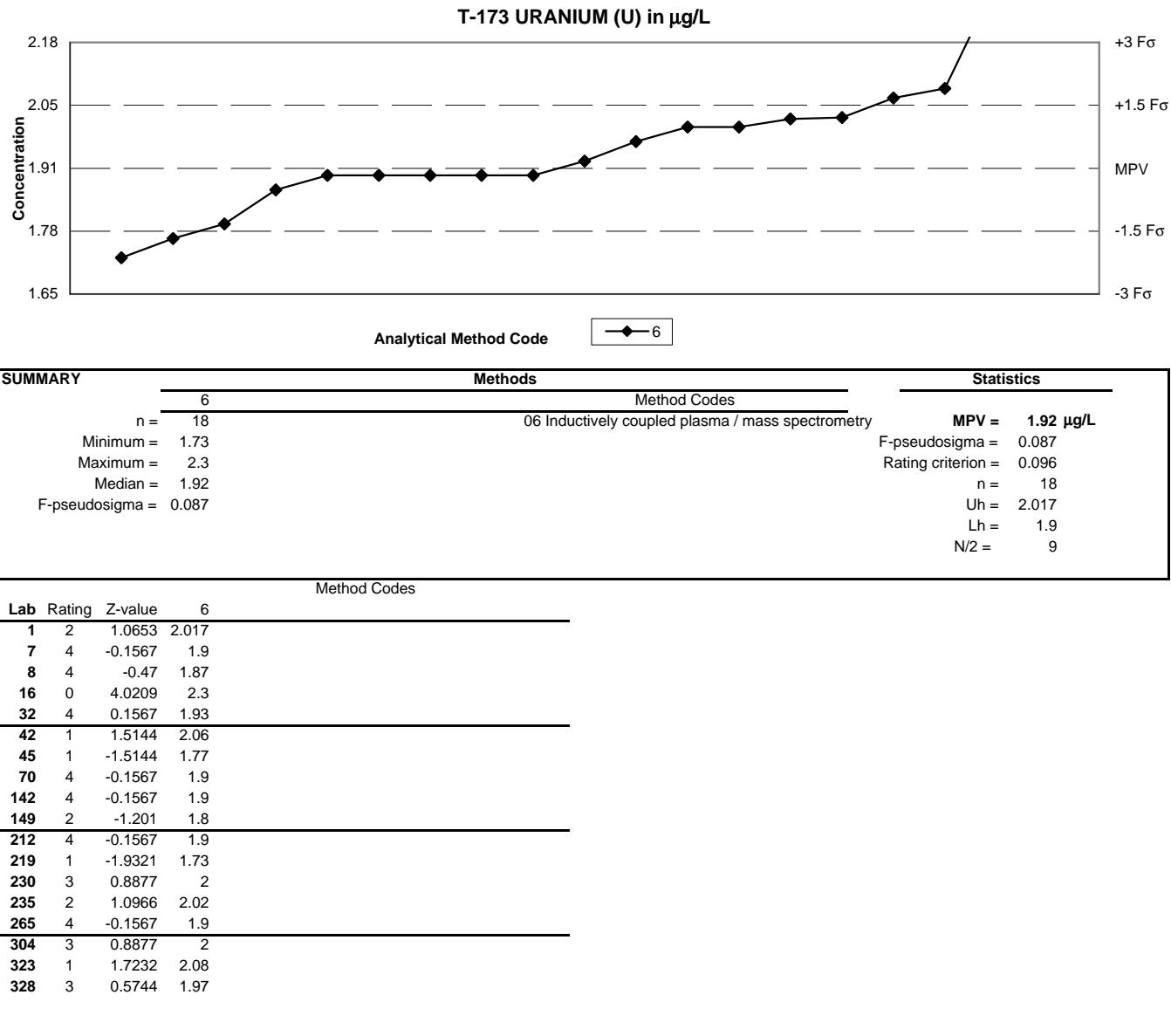
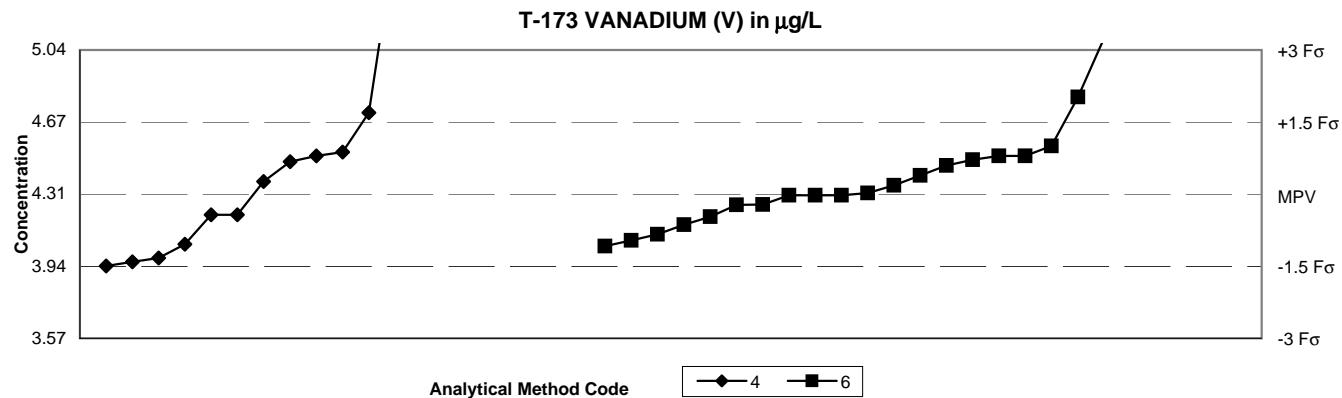


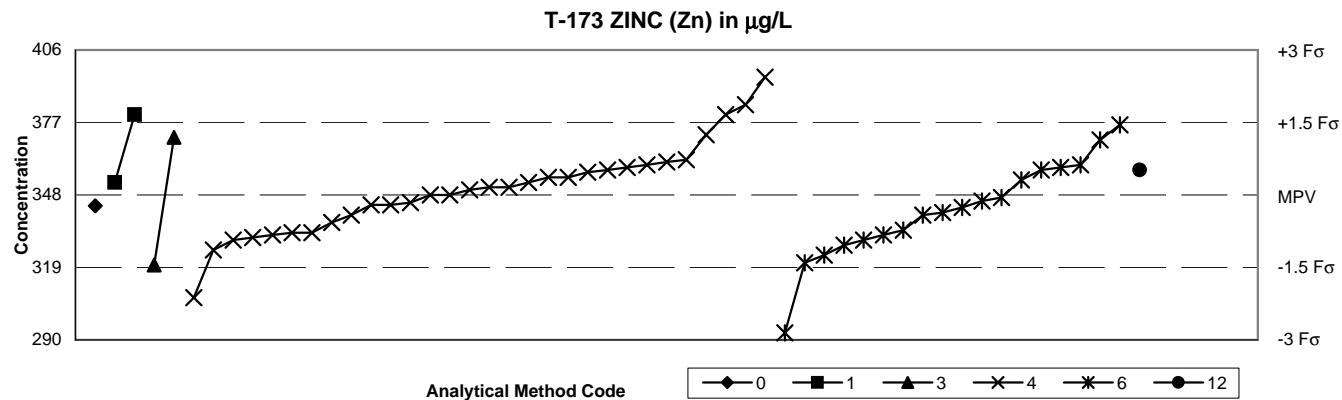
Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY			Methods		Statistics	
			4	6	Method Codes	
n =	12	20			04 Inductively coupled plasma	MPV = 4.31 $\mu\text{g/L}$
Minimum =	3.94	4.04			06 Inductively coupled plasma / mass spectrometry	$F\text{-pseudosigma} = 0.245$
Maximum =	5.6	5.1				n = 32
Median =	4.29	4.31				Uh = 4.50
F-pseudosigma =	0.367	0.200				Lh = 4.17

Lab	Rating	Z-value	Method Codes	
			4	6
1	4	-0.22	--	4.252
5	3	0.88	4.52	--
7	NR	--	<20	--
8	2	-1.08	--	4.04
16	3	0.80	4.5	--
18	NR	--	<5	--
24	NR	--	<18	--
25	NR	--	< 19	--
32	4	-0.22	--	4.25
42	3	-0.63	--	4.15
45	3	-0.84	--	4.1
50	4	0.02	--	4.31
59	4	-0.47	--	4.19
70	3	0.80	--	4.5
76	4	-0.02	--	4.3
86	2	-1.49	3.94	--
97	2	-1.41	3.96	--
100	NR	--	<5	--
105	NR	--	<20	--
134	4	-0.43	4.2	--
138	2	-1.04	4.05	--
142	3	-0.96	--	4.07
146	4	-0.43	4.2	--
149	4	-0.02	--	4.3
212	4	0.18	--	4.35
219	4	-0.02	--	4.3
220	0	5.29	5.6	--
230	0	2.02	--	4.8
234	4	0.27	4.37	--
235	3	0.80	--	4.5
247	NR	--	<10	--
256	2	-1.33	3.98	--
265	4	0.39	--	4.4
304	3	0.59	--	4.45
323	0	3.25	--	5.1
328	3	0.67	4.47	--
356	3	0.72	--	4.48
379	1	1.70	4.72	--
390	3	1.00	--	4.55

Table 11. Statistical summary of reported data for standard reference sample T-173 (trace constituents) -- continued



SUMMARY		Methods						Statistics	
		0	1	3	4	6	12	Method Codes	
n =		1	2	2	30	18	1	00 Other	MPV = 348 $\mu\text{g/L}$
Minimum =		343.7	353	320	307	293	358	01 Atomic absorption: direct, air	F-pseudosigma = 19.3
Maximum =					371	395	376	03 Atomic absorption: graphite furnace	n = 54
Median =						351	342	04 Inductively coupled plasma	Uh = 359
F-pseudosigma =						16.3	20.8	06 Inductively coupled plasma / mass spectrometry	Lh = 333
								12 Flame emission	

Lab	Rating	Z-value	Method Codes						Method Codes					
			0	1	3	4	6	12	0	1	3	4	6	12
1	4	-0.12	--	--	--	--	345.6	--	256	2	-1.45	--	--	--
5	4	0.26	--	--	--	353	--	--	259	3	0.52	--	--	--
7	3	-0.57	--	--	--	337	--	--	265	4	-0.16	--	--	--
8	0	-2.85	--	--	--	--	293	--	273	1	1.66	--	--	--
10	4	0.26	--	353	--	--	--	--	277	3	0.52	--	--	358
12	3	-0.93	--	--	--	330	--	--	304	3	-0.73	--	--	--
16	3	-0.78	--	--	--	333	--	--	307	1	1.66	--	380	--
18	0	-2.13	--	--	--	307	--	--	323	4	-0.42	--	--	340
23	2	-1.14	--	--	--	326	--	--	326	4	-0.22	343.7	--	--
24	4	0.36	--	--	--	355	--	--	328	1	1.87	--	--	384
25	3	0.68	--	--	--	361.2	--	--	330	2	1.25	--	--	372
32	3	0.62	--	--	--	--	360	--	356	2	-1.04	--	--	328
42	4	0.00	--	--	--	348	--	--	379	3	-0.88	--	--	331
45	3	-0.93	--	--	--	--	330	--	390	2	1.45	--	--	376
46	4	-0.21	--	--	--	344	--	--						
50	2	-1.25	--	--	--	--	324	--						
59	4	-0.26	--	--	--	--	343	--						
70	3	0.57	--	--	--	--	359	--						
86	4	0.16	--	--	--	351	--	--						
89	2	1.19	--	--	371	--	--	--						
97	4	0.00	--	--	--	348	--	--						
100	4	0.16	--	--	--	351	--	--						
105	0	2.44	--	--	--	395	--	--						
113	4	-0.21	--	--	--	344	--	--						
134	3	0.57	--	--	--	359	--	--						
138	3	-0.78	--	--	--	333	--	--						
142	4	0.31	--	--	--	--	354	--						
146	3	0.62	--	--	--	360	--	--						
147	4	-0.36	--	--	--	--	341	--						
149	2	1.14	--	--	--	--	370	--						
180	2	-1.40	--	--	--	--	321	--						
190	4	0.36	--	--	--	355	--	--						
212	4	0.47	--	--	--	357	--	--						
219	3	-0.83	--	--	--	--	332	--						
220	3	-0.83	--	--	--	332	--	--						
227	3	0.73	--	--	--	362	--	--						
230	4	-0.05	--	--	--	--	347	--						
234	4	-0.42	--	--	--	340	--	--						
235	3	0.52	--	--	--	--	358	--						
247	4	0.10	--	--	--	350	--	--						

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

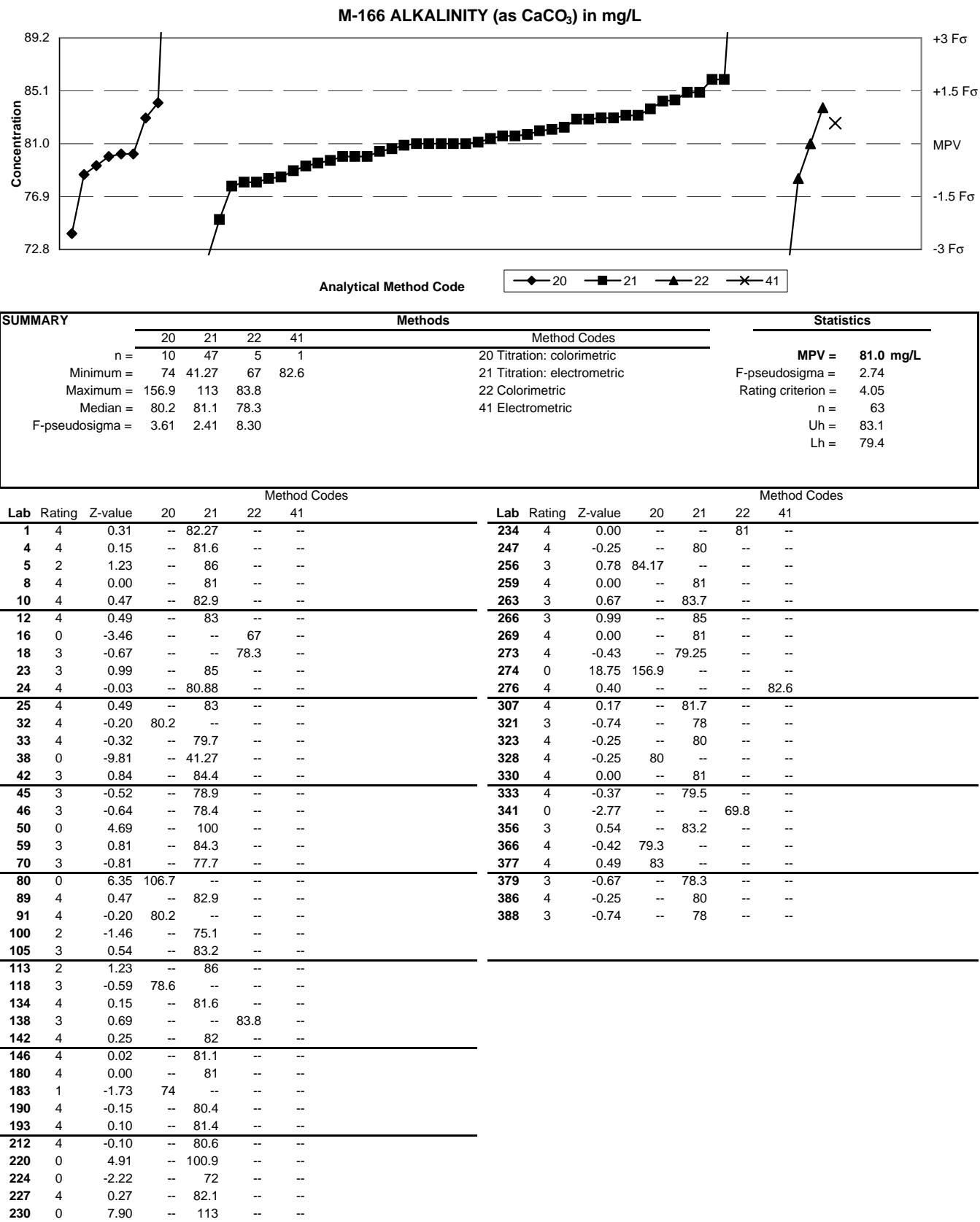
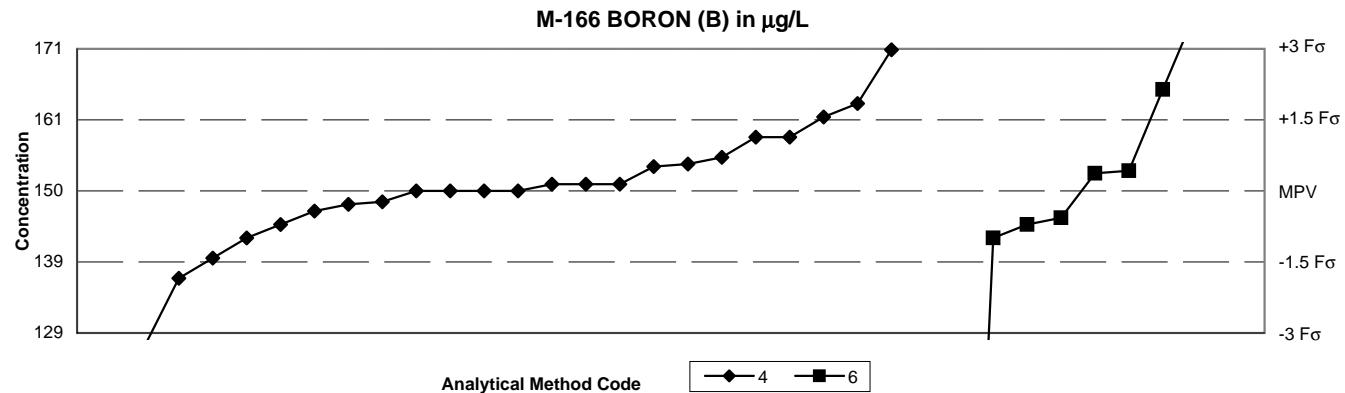


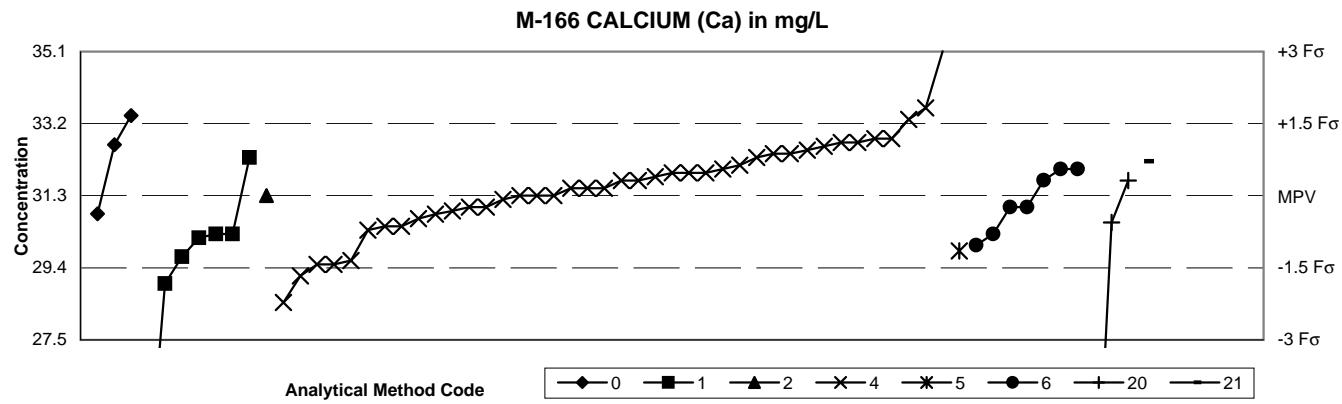
Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY			Methods			Statistics		
			4	6	22	Method Codes		
n =	24	8	0			04 Inductively coupled plasma	MPV =	150 µg/L
Minimum =	59	33.3				06 Inductively coupled plasma / mass spectrometry	F-pseudosigma =	7.0
Maximum =	171	177				22 Colorimetric	Rating criterion =	7.5
Median =	150	149					n =	32
F-pseudosigma =	6.3	11.2					Uh =	155
							Lh =	145

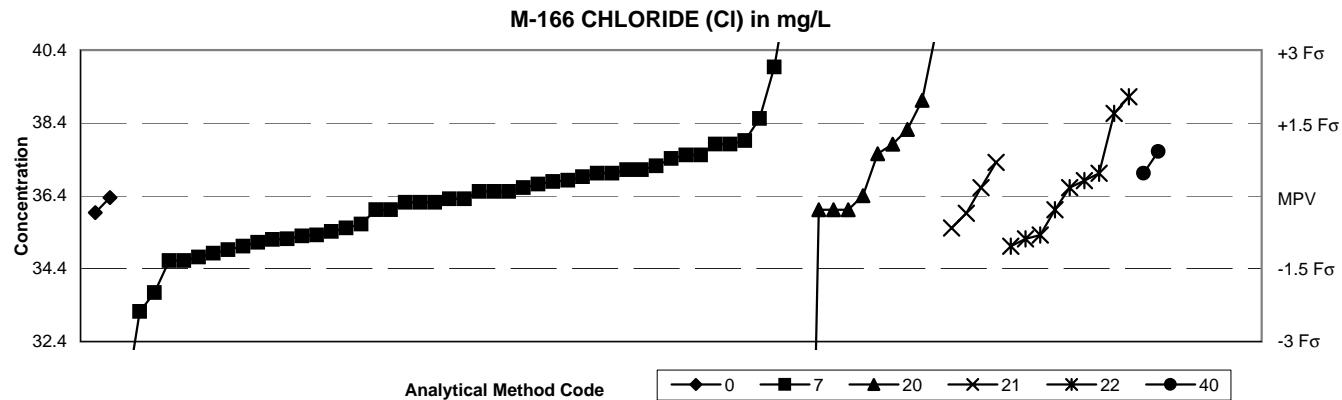
Lab	Rating	Z-value	Method Codes		
			4	6	22
1	0	2.01	--	165.1	--
5	3	0.53	154	--	--
8	0	3.60	--	177	--
16	0	-12.13	59	--	--
18	4	0.13	151	--	--
24	4	-0.40	147	--	--
25	4	-0.21	148.4	--	--
32	3	-0.93	--	143	--
42	2	-1.33	140	--	--
45	4	0.40	--	153	--
50	4	0.13	151	--	--
59	0	-15.56	--	33.3	--
76	4	0.35	--	152.6	--
86	3	-0.67	145	--	--
100	4	-0.27	148	--	--
105	NR	--	<200	--	--
134	4	0.00	150	--	--
138	1	-1.73	137	--	--
142	0	2.80	171	--	--
212	0	-3.07	127	--	--
219	3	-0.93	143	--	--
220	3	0.67	155	--	--
230	3	-0.53	--	146	--
234	2	1.07	158	--	--
247	4	0.00	150	--	--
259	2	1.47	161	--	--
265	3	-0.67	--	145	--
319	4	0.00	150	--	--
323	2	1.07	158	--	--
326	4	0.48	153.6	--	--
327	NR	--	--	--	<250
328	4	0.00	150	--	--
341	1	1.73	163	--	--
377	4	0.13	151	--	--

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY			Methods								Statistics									
			Method Codes																	
Lab	Rating	Z-value	0	1	2	4	5	6	20	21	Method Codes	0	1	2	4	5	6	20	21	
1	4	-0.26	--	--	--	30.9	--	--	--	--	01 Atomic absorption: direct, air									
5	4	0.13	--	--	--	31.5	--	--	--	--	02 Atomic absorption: direct, nitrous oxide									
8	4	0.38	--	--	--	31.9	--	--	--	--	04 Inductively coupled plasma									
10	3	0.64	--	32.3	--	--	--	--	--	--	05 Direct current plasma									
12	3	0.64	--	--	--	32.3	--	--	--	--	06 Inductively coupled plasma / mass spectrometry									
16	2	-1.15	--	--	--	29.5	--	--	--	--	20 Titration: colorimetric									
18	4	-0.06	--	--	--	31.2	--	--	--	--	21 Titration: electrometric									
23	4	0.45	--	--	--	32	--	--	--	--										
24	3	-0.51	--	--	--	30.5	--	--	--	--										
25	0	2.42	--	--	--	35.09	--	--	--	--										
30	4	-0.19	--	--	--	--	--	31	--	--										
32	4	0.45	--	--	--	--	--	32	--	--										
33	3	-0.93	--	--	--	--	29.85	--	--	--										
38	4	0.00	--	--	31.3	--	--	--	--	--										
42	4	-0.19	--	--	--	31	--	--	--	--										
45	3	-0.64	--	--	--	--	--	30.3	--	--										
46	4	0.00	--	--	--	31.3	--	--	--	--										
50	3	0.77	--	--	--	32.5	--	--	--	--										
59	3	-0.64	--	30.3	--	--	--	--	--	--										
64	4	-0.38	--	--	--	30.7	--	--	--	--										
70	3	0.70	--	--	--	32.4	--	--	--	--										
76	4	0.26	--	--	--	--	--	31.71	--	--										
80	3	-0.64	--	30.3	--	--	--	--	--	--										
86	4	0.00	--	--	--	31.3	--	--	--	--										
100	3	0.83	--	--	--	32.6	--	--	--	--										
102	2	1.34	33.4	--	--	--	--	--	--	--										
105	2	1.28	--	--	--	33.3	--	--	--	--										
113	4	-0.19	--	--	--	31	--	--	--	--										
134	4	0.26	--	--	--	31.7	--	--	--	--										
138	4	0.13	--	--	--	31.5	--	--	--	--										
142	3	0.96	--	--	--	32.8	--	--	--	--										
146	3	0.70	--	--	--	32.4	--	--	--	--										
149	4	-0.19	--	--	--	--	--	31	--	--										
180	4	0.00	--	--	--	31.3	--	--	--	--										
190	1	-1.79	--	--	--	28.5	--	--	--	--										
193	3	-0.83	--	--	--	--	--	30	--	--										
212	2	-1.09	--	--	--	29.6	--	--	--	--										
219	3	-0.58	--	--	--	30.4	--	--	--	--										
220	3	-0.51	--	--	--	30.5	--	--	--	--										
224	4	-0.31	--	--	--	30.82	--	--	--	--										

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY			Methods						Statistics						
			0	7	20	21	22	40	Method Codes						
			n = 2	46	10	4	9	2	Method Codes						
			Minimum = 35.92	30.6	15.93	35.5	35	37	00 Other						
			Maximum = 36.33	42.3	41	37.3	39.1	37.6	07 Ion chromatography						
			Median = 36.3	37.0		36.6			20 Titration: colorimetric						
			F-pseudosigma = 1.41	1.63		1.26			21 Titration: electrometric						
									22 Colorimetric						
									40 Ion selective electrode						
Lab			Method Codes						Method Codes						
Lab	Rating	Z-value	0	7	20	21	22	40	Lab	Rating	Z-value	0	7	20	
1	4	0.24	--	36.81	--	--	--	--	227	4	0.21	--	36.77	--	--
4	4	0.07	--	36.5	--	--	--	--	230	4	0.34	--	37	--	--
5	4	-0.03	36.33	--	--	--	--	--	234	3	-0.98	--	34.6	--	--
8	0	3.25	--	42.3	--	--	--	--	247	4	0.40	--	37.1	--	--
10	4	-0.04	--	36.3	--	--	--	--	254	4	-0.21	--	36	--	--
16	3	-0.65	--	--	--	--	35.2	--	256	3	-0.60	--	35.28	--	--
18	3	-0.59	--	--	--	--	35.3	--	259	4	-0.26	--	--	35.9	--
24	4	0.12	--	--	--	--	36.6	--	263	4	0.51	--	--	37.3	--
25	4	-0.10	--	36.2	--	--	--	--	265	3	-0.98	--	34.6	--	--
30	4	0.45	--	37.2	--	--	--	--	266	4	0.12	--	--	36.6	--
32	3	-0.81	--	34.9	--	--	--	--	269	4	0.34	--	--	--	--
33	1	1.95	--	39.92	--	--	--	--	273	4	-0.25	35.92	--	--	--
42	3	-0.92	--	34.7	--	--	--	--	274	0	-11.24	--	15.93	--	--
45	2	1.17	--	38.5	--	--	--	--	276	3	1.00	--	38.2	--	--
46	4	0.34	--	--	--	--	37	--	277	0	-3.18	--	30.6	--	--
50	3	0.78	--	37.8	--	--	--	--	301	2	-1.46	--	33.73	--	--
59	4	0.12	--	36.6	--	--	--	--	307	4	-0.21	--	36	--	--
64	3	-0.59	--	35.3	--	--	--	--	319	0	2.54	--	41	--	--
70	3	-0.54	--	35.4	--	--	--	--	321	4	-0.43	--	35.6	--	--
76	3	-0.65	--	35.2	--	--	--	--	323	1	-1.75	--	33.2	--	--
80	3	0.78	--	--	37.8	--	--	--	326	4	-0.48	--	--	35.5	--
89	4	-0.04	--	36.3	--	--	--	--	327	2	1.44	--	39	--	--
91	4	-0.10	--	36.2	--	--	--	--	328	3	-0.76	--	35	--	--
100	4	0.29	--	36.9	--	--	--	--	330	3	-0.76	--	--	35	--
102	3	0.62	--	37.5	--	--	--	--	341	4	0.23	--	--	--	36.8
105	3	0.84	--	37.9	--	--	--	--	356	4	0.18	--	36.7	--	--
113	4	0.07	--	36.5	--	--	--	--	366	2	1.50	--	--	--	39.1
121	4	0.00	--	--	36.38	--	--	--	374	4	-0.21	--	36	--	--
134	4	0.07	--	36.5	--	--	--	--	377	3	0.67	--	--	--	37.6
138	4	0.40	--	37.1	--	--	--	--	379	4	-0.21	--	--	--	36
142	4	0.34	--	37	--	--	--	--	383	3	-0.87	--	34.8	--	--
146	3	0.62	--	37.5	--	--	--	--	386	4	-0.21	--	36	--	--
149	3	0.56	--	37.4	--	--	--	--	388	4	-0.21	--	36	--	--
180	3	0.78	--	37.8	--	--	--	--							
183	3	0.64	--	--	37.54	--	--	--							
190	3	-0.70	--	35.1	--	--	--	--							
208	4	-0.10	--	36.2	--	--	--	--							
212	4	-0.48	--	35.5	--	--	--	--							
219	3	-0.66	--	35.18	--	--	--	--							
220	2	1.24	--	--	--	--	38.64	--							

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

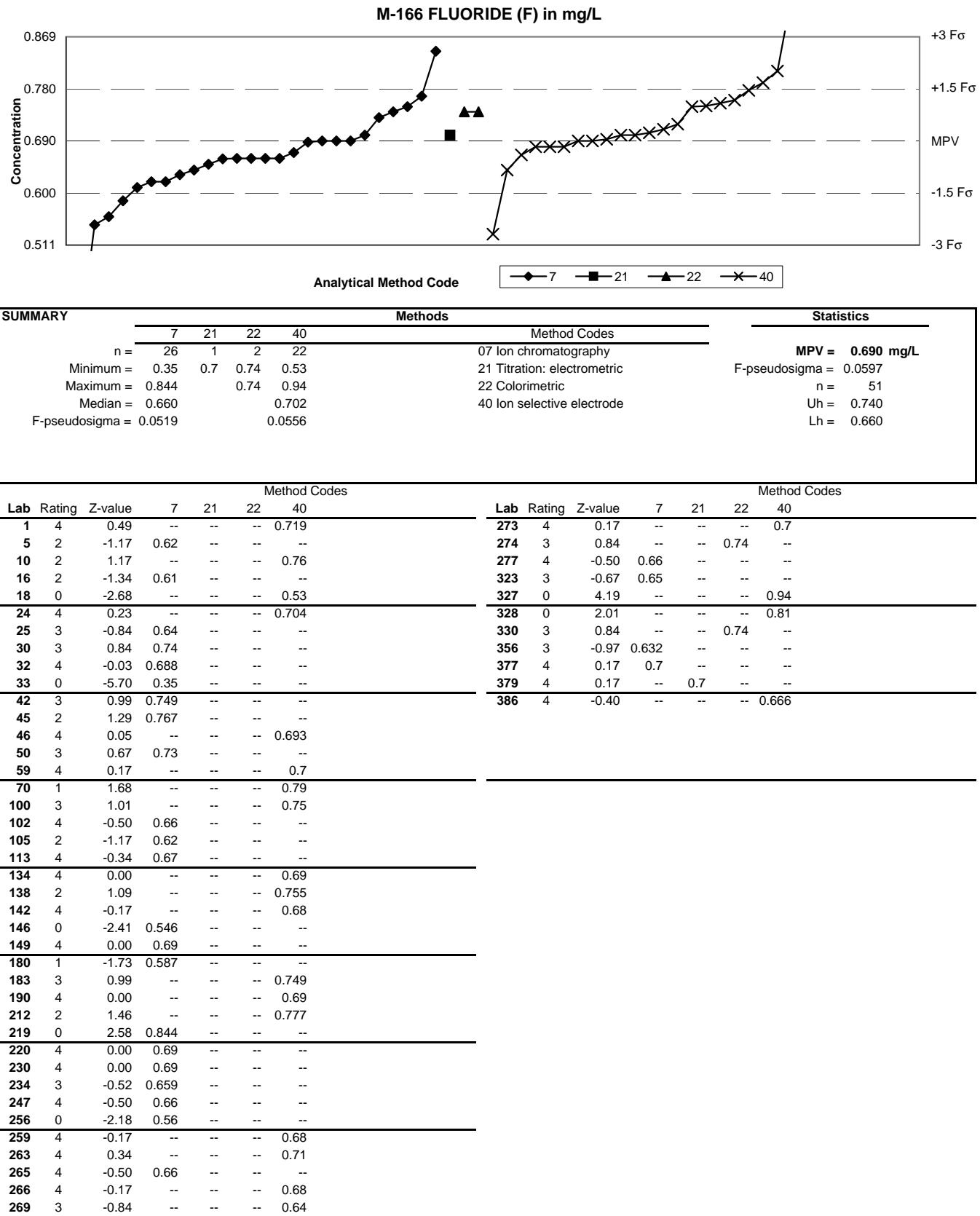
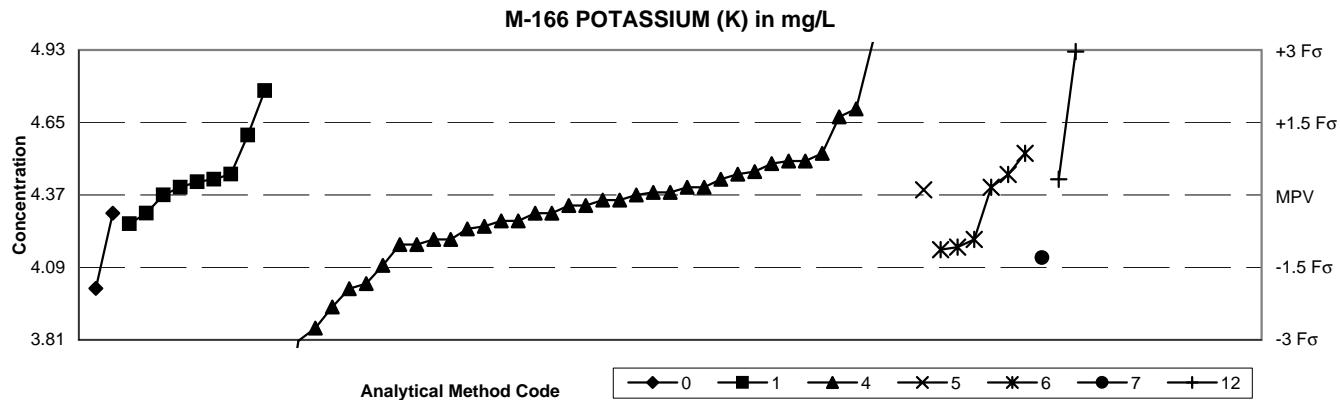


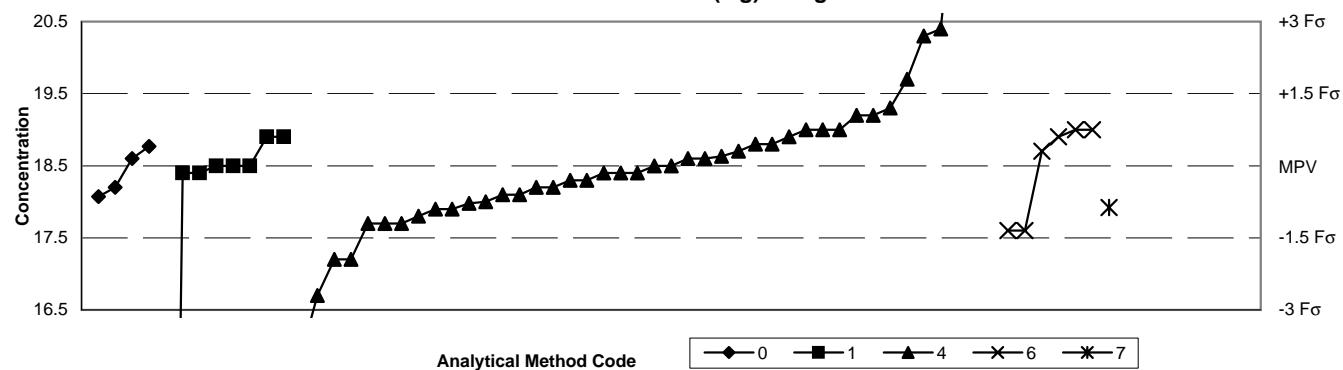
Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY			Methods								Statistics								
			Method Codes																
			0	1	4	5	6	7	12	Method Codes									
	n =		2	9	38	1	6	1	2	00 Other									
	Minimum =		4.012	4.26	3.4	4.39	4.16	4.13	4.43	01 Atomic absorption: direct, air	MPV = 4.37 mg/L								
	Maximum =		4.3	4.77	17.5		4.53		4.92	04 Inductively coupled plasma	F-pseudosigma = 0.185								
	Median =				4.42	4.34		4.30		05 Direct current plasma	Rating criterion = 0.219								
	F-pseudosigma =					0.059	0.193		0.206	06 Inductively coupled plasma / mass spectrometry	n = 59								
										07 Ion chromatography	Uh = 4.45								
										12 Flame emission	Lh = 4.20								
Method Codes																			
Lab	Rating	Z-value	0	1	4	5	6	7	12	Lab	Rating	Z-value	0	1	4	5	6	7	12
1	4	0.05	--	--	4.38	--	--	--	--	234	4	0.37	--	--	4.45	--	--	--	--
5	4	0.00	--	--	4.37	--	--	--	--	247	0	-2.56	--	--	3.81	--	--	--	--
8	4	-0.32	--	--	4.3	--	--	--	--	256	2	-1.10	--	--	--	--	--	4.13	--
10	4	-0.32	--	4.3	--	--	--	--	--	259	4	-0.18	--	--	4.33	--	--	--	--
12	3	0.59	--	--	4.5	--	--	--	--	265	4	-0.32	--	--	4.3	--	--	--	--
16	3	0.59	--	--	4.5	--	--	--	--	266	4	0.27	--	--	--	--	--	--	4.43
18	0	-2.33	--	--	3.86	--	--	--	--	273	1	1.51	--	--	4.7	--	--	--	--
23	4	-0.18	--	--	4.33	--	--	--	--	274	0	2.52	--	--	--	--	--	--	4.92
24	4	0.14	--	--	4.4	--	--	--	--	277	1	1.83	--	4.77	--	--	--	--	--
25	1	-1.97	--	--	3.94	--	--	--	--	279	4	-0.32	4.3	--	--	--	--	--	--
32	4	0.14	--	--	--	--	4.4	--	--	323	4	-0.46	--	--	4.27	--	--	--	--
33	4	0.09	--	--	--	4.39	--	--	--	326	3	-0.87	--	--	4.18	--	--	--	--
38	4	0.37	--	4.45	--	--	--	--	--	328	0	2.70	--	--	4.96	--	--	--	--
42	3	-0.59	--	--	4.24	--	--	--	--	341	4	0.14	--	4.4	--	--	--	--	--
45	3	-0.92	--	--	--	--	4.17	--	--	366	4	0.05	--	--	4.38	--	--	--	--
46	3	-0.55	--	--	4.25	--	--	--	--	377	4	-0.50	--	4.26	--	--	--	--	--
50	4	-0.09	--	--	4.35	--	--	--	--	379	0	60.09	--	--	17.5	--	--	--	--
59	4	0.00	--	4.37	--	--	--	--	--	383	3	-0.78	--	--	4.2	--	--	--	--
64	4	0.27	--	4.43	--	--	--	--	--	386	1	-1.65	--	--	4.01	--	--	--	--
70	4	-0.09	--	--	4.35	--	--	--	--										
76	4	0.36	--	--	--	--	4.448	--	--										
80	2	1.05	--	--	4.6	--	--	--	--										
86	4	0.41	--	--	4.46	--	--	--	--										
100	3	0.55	--	--	4.49	--	--	--	--										
102	0	-4.44	--	--	3.4	--	--	--	--										
105	3	0.73	--	--	4.53	--	--	--	--										
113	4	0.14	--	--	4.4	--	--	--	--										
134	4	0.23	--	4.42	--	--	--	--	--										
138	4	-0.46	--	--	4.27	--	--	--	--										
142	4	0.27	--	--	4.43	--	--	--	--										
146	2	1.37	--	--	4.67	--	--	--	--										
149	3	-0.78	--	--	--	--	4.2	--	--										
180	3	-0.87	--	--	4.18	--	--	--	--										
190	0	4.26	--	--	5.3	--	--	--	--										
193	3	-0.96	--	--	--	--	4.16	--	--										
212	1	-1.56	--	--	4.03	--	--	--	--										
219	3	-0.78	--	--	4.2	--	--	--	--										
220	2	-1.24	--	--	4.1	--	--	--	--										
224	1	-1.64	4.012	--	--	--	--	--	--										
230	3	0.73	--	--	--	--	4.53	--	--										

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

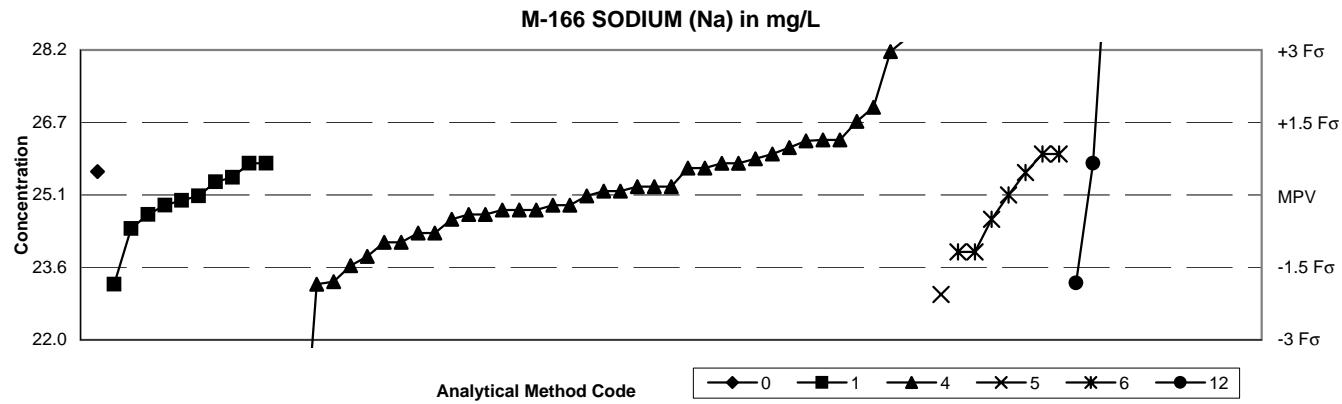
M-166 MAGNESIUM (Mg) in mg/L



SUMMARY		Methods							Statistics						
		0	1	4	5	6	7	22	Method Codes						
n =		4	8	41	1	6	1	1	00 Other						
Minimum =		18.07	1.399	15.84	20.95	17.6	17.92	24.71	01 Atomic absorption: direct, air						
Maximum =		18.77	18.9	26.1		19			04 Inductively coupled plasma						
Median =			18.5	18.4		18.8			05 Direct current plasma						
F-pseudosigma =			0.22	0.76		1.04			06 Inductively coupled plasma / mass spectrometry						
									07 Ion chromatography						
									22 Colorimetric						

Lab	Rating	Z-value	Method Codes							Method Codes							
			0	1	4	5	6	7	22	0	1	4	5	6	7	22	
1	3	-0.86	--	--	17.7	--	--	--	--	230	4	0.43	--	--	18.9	--	--
5	3	-0.65	--	--	17.9	--	--	--	--	234	4	0.11	--	--	18.6	--	--
8	4	-0.22	--	--	18.3	--	--	--	--	247	1	-1.95	--	--	16.7	--	--
10	4	-0.11	--	18.4	--	--	--	--	--	256	3	-0.63	--	--	--	17.92	--
12	3	0.54	--	--	19	--	--	--	--	259	4	0.32	--	--	18.8	--	--
16	3	-0.54	--	--	18	--	--	--	--	263	4	0.29	18.77	--	--	--	--
18	2	-1.41	--	--	17.2	--	--	--	--	265	4	-0.32	--	--	18.2	--	--
23	4	0.43	--	--	18.9	--	--	--	--	266	4	0.11	18.6	--	--	--	--
24	4	0.32	--	--	18.8	--	--	--	--	273	1	1.95	--	--	20.3	--	--
25	0	-2.88	--	--	15.84	--	--	--	--	274	0	6.71	--	--	--	--	24.71
30	3	0.54	--	--	--	--	19	--	--	277	4	0.43	--	18.9	--	--	--
32	4	0.22	--	--	--	--	18.7	--	--	279	4	-0.32	18.2	--	--	--	--
33	0	2.65	--	--	--	20.95	--	--	--	301	0	-18.49	--	1.399	--	--	--
38	4	0.00	--	18.5	--	--	--	--	--	323	4	-0.22	--	--	18.3	--	--
42	3	-0.86	--	--	17.7	--	--	--	--	326	4	0.14	--	--	18.63	--	--
45	3	-0.97	--	--	--	--	17.6	--	--	328	2	1.30	--	--	19.7	--	--
46	3	-0.76	--	--	17.8	--	--	--	--	341	4	0.43	--	18.9	--	--	--
50	3	0.54	--	--	19	--	--	--	--	366	4	-0.11	--	--	18.4	--	--
59	4	-0.11	--	18.4	--	--	--	--	--	377	4	0.00	--	18.5	--	--	--
64	4	-0.43	--	--	18.1	--	--	--	--	379	0	8.22	--	--	26.1	--	--
70	4	0.22	--	--	18.7	--	--	--	--	383	4	-0.11	--	--	18.4	--	--
80	4	0.00	--	18.5	--	--	--	--	--	386	2	-1.41	--	--	17.2	--	--
86	4	0.00	--	--	18.5	--	--	--	--								
100	4	-0.11	--	--	18.4	--	--	--	--								
102	0	4.54	--	--	22.7	--	--	--	--								
105	0	2.05	--	--	20.4	--	--	--	--								
113	4	0.11	--	--	18.6	--	--	--	--								
134	4	-0.32	--	--	18.2	--	--	--	--								
138	4	0.00	--	--	18.5	--	--	--	--								
142	3	0.76	--	--	19.2	--	--	--	--								
146	3	0.76	--	--	19.2	--	--	--	--								
149	3	0.54	--	--	--	--	19	--	--								
180	4	-0.43	--	--	18.1	--	--	--	--								
190	3	0.86	--	--	19.3	--	--	--	--								
193	3	-0.97	--	--	--	--	17.6	--	--								
212	3	-0.65	--	--	17.9	--	--	--	--								
219	3	-0.86	--	--	17.7	--	--	--	--								
220	3	-0.56	--	--	17.98	--	--	--	--								
224	4	-0.46	18.07	--	--	--	--	--	--								
227	3	0.54	--	--	19	--	--	--	--								

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY			Methods						Statistics		
			0	1	4	5	6	12	Method Codes		
n =	1	10	39	1	7	3			00 Other		
Minimum =	25.62	23.2	5.2	22.98	23.9	23.23			01 Atomic absorption: direct, air	F-pseudosigma =	1.04
Maximum =					26	31.33			04 Inductively coupled plasma	Rating criterion =	1.26
Median =	25.1	25.2		25.1					05 Direct current plasma	n =	61
F-pseudosigma =	0.59	1.11		1.15					06 Inductively coupled plasma / mass spectrometry	Uh =	25.8
									12 Flame emission	Lh =	24.4
Method Codes											
Lab	Rating	Z-value	0	1	4	5	6	12	Lab	Rating	Z-value
1	4	-0.25	--	--	24.8	--	--	--	230	3	0.70
5	4	0.06	--	--	25.2	--	--	--	234	4	-0.25
8	4	0.14	--	--	25.3	--	--	--	247	2	-1.21
10	4	0.22	--	25.4	--	--	--	--	256	2	-1.50
12	3	0.94	--	--	26.3	--	--	--	259	4	0.46
16	3	-0.81	--	--	24.1	--	--	--	265	4	0.06
18	2	-1.05	--	--	23.8	--	--	--	266	3	0.54
23	4	-0.18	--	--	24.9	--	--	--	273	3	0.70
24	4	-0.41	--	--	24.6	--	--	--	274	0	4.94
25	3	0.92	--	--	26.28	--	--	--	277	3	0.54
30	3	0.70	--	--	--	--	26	--	279	4	0.40
32	4	0.38	--	--	--	--	25.6	--	321	1	-1.53
33	1	-1.70	--	--	--	22.98	--	--	323	4	-0.02
38	3	-0.57	--	24.4	--	--	--	--	326	3	0.81
42	4	-0.33	--	--	24.7	--	--	--	328	0	2.69
45	3	-0.97	--	--	--	--	23.9	--	341	4	-0.10
46	4	-0.33	--	--	24.7	--	--	--	366	4	-0.18
50	3	0.54	--	--	25.8	--	--	--	377	4	0.30
59	4	-0.02	--	25.1	--	--	--	--	379	0	-15.86
64	3	0.54	--	25.8	--	--	--	--	383	4	0.14
70	4	0.14	--	--	25.3	--	--	--	386	1	-1.53
76	4	0.00	--	--	--	--	25.12	--			
80	4	-0.33	--	24.7	--	--	--				
86	4	0.46	--	--	25.7	--	--	--			
100	2	1.26	--	--	26.7	--	--	--			
102	0	-5.43	--	--	18.3	--	--	--			
105	0	2.77	--	--	28.6	--	--	--			
113	3	0.62	--	--	25.9	--	--	--			
134	4	-0.18	--	24.9	--	--	--				
138	3	0.54	--	--	25.8	--	--	--			
142	3	0.94	--	--	26.3	--	--	--			
146	2	1.50	--	--	27	--	--	--			
149	4	-0.41	--	--	--	--	24.6	--			
180	4	-0.25	--	--	24.8	--	--	--			
190	0	2.45	--	--	28.2	--	--	--			
193	3	-0.97	--	--	--	--	23.9	--			
212	3	-0.65	--	--	24.3	--	--	--			
219	3	-0.65	--	--	24.3	--	--	--			
220	3	-0.81	--	--	24.1	--	--	--			
224	2	-1.48	--	--	23.26	--	--	--			

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

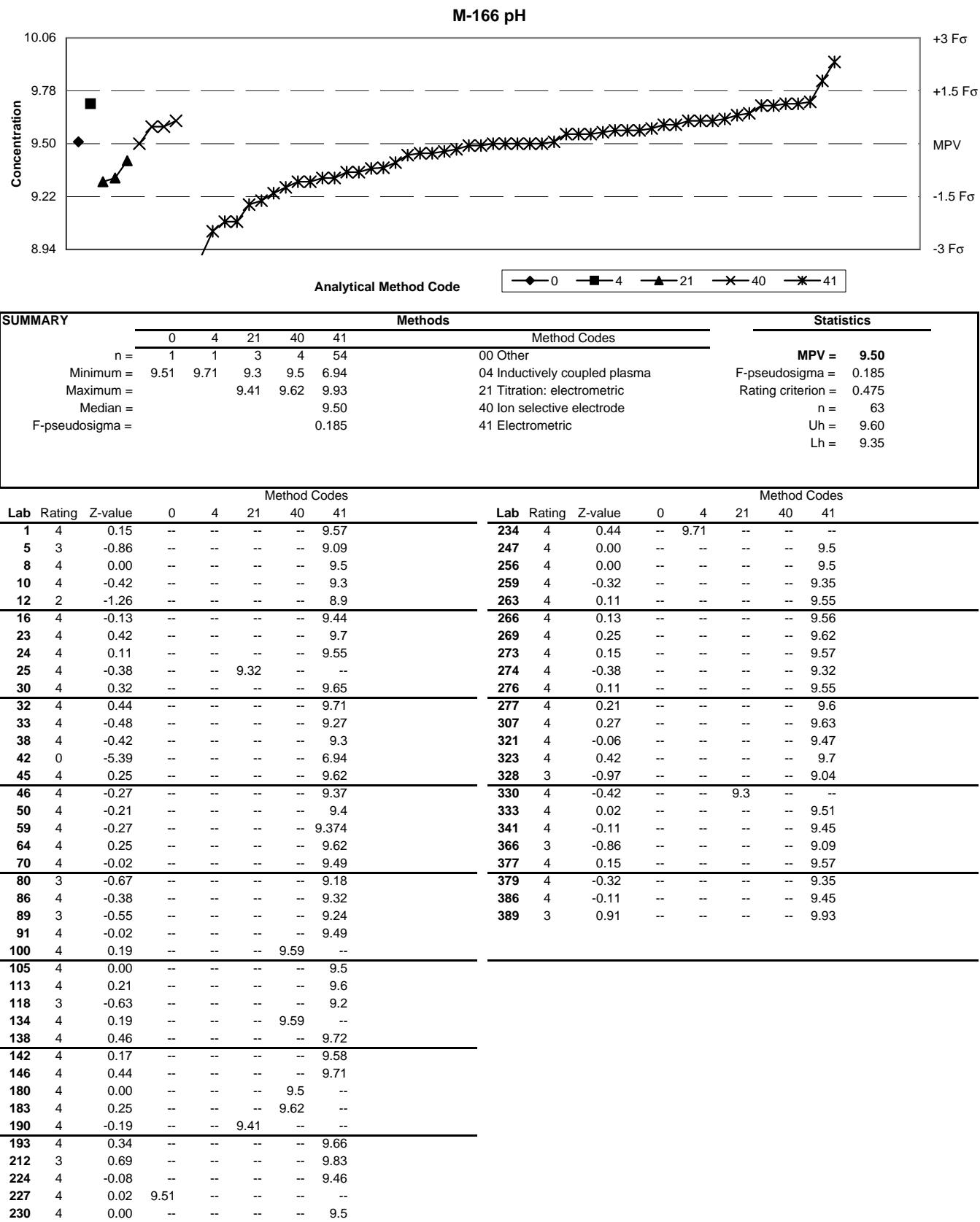
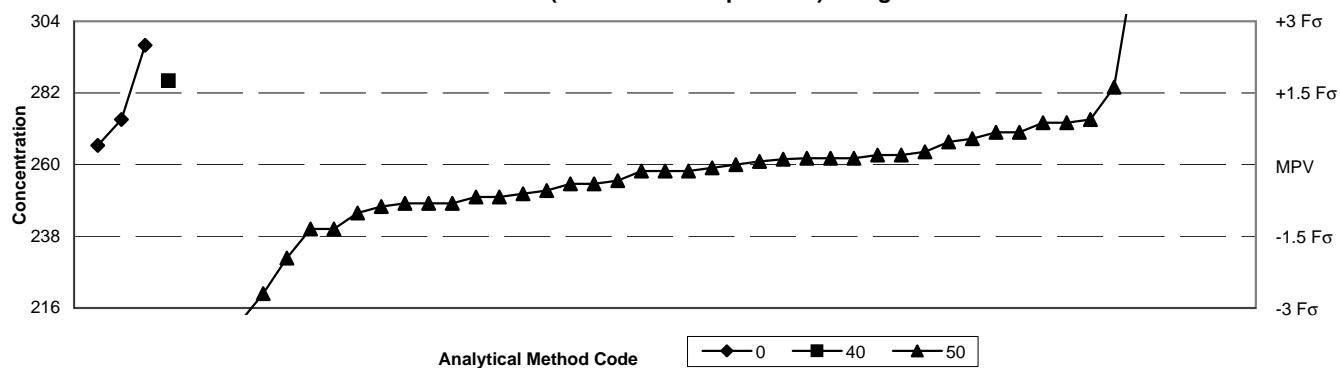


Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

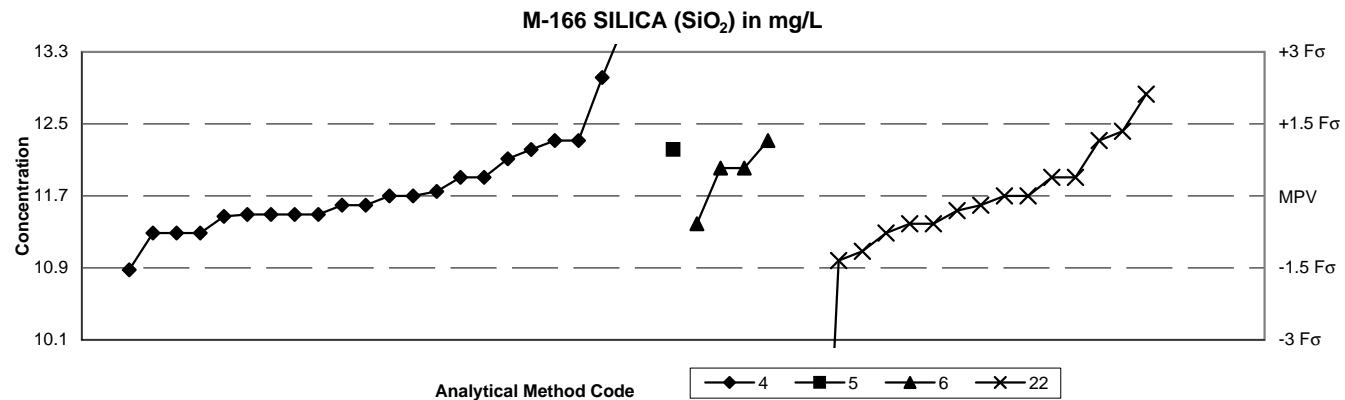
M-166 ROE (Residue on Evaporation) in mg/L



SUMMARY	Methods			Statistics		
	0	40	50	Method Codes	MPV =	260 mg/L
n =	3	1	43	00 Other	F-pseudosigma =	14.8
Minimum =	266	286	127	40 Ion selective electrode	n =	47
Maximum =	297		380	50 Gravimetric	Uh =	269
Median =			258		Lh =	249
F-pseudosigma =			13.0			

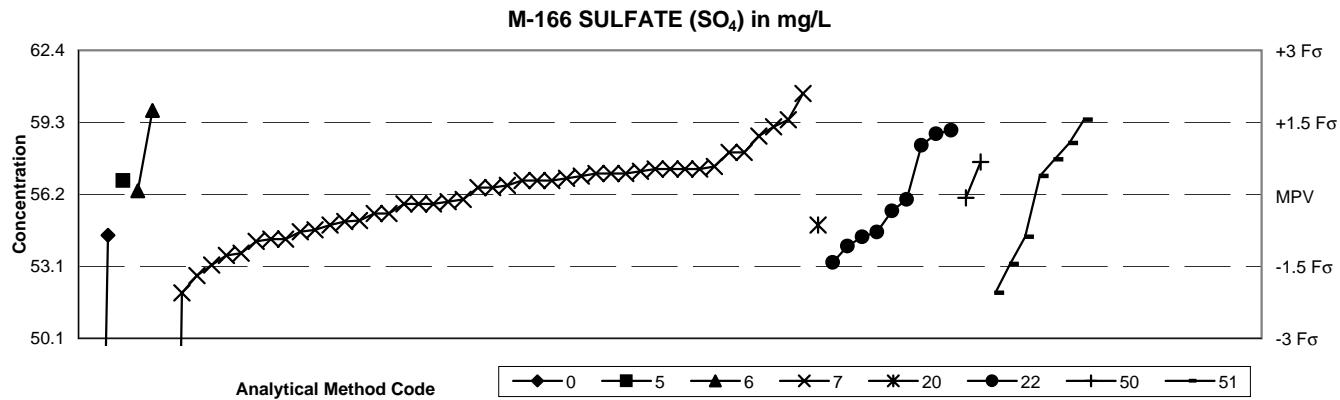
Lab	Rating	Z-value	Method Codes			Method Codes		
			0	40	50	0	40	50
1	4	0.11	--	--	261.7	341	1	1.62
5	3	0.54	--	--	268	356	4	0.47
8	3	0.88	--	--	273	366	4	0.00
10	3	-0.61	--	--	251	377	3	0.94
16	4	0.13	--	--	262	379	0	-3.31
18	0	8.09	--	--	380	386	4	0.13
25	3	-0.67	--	--	250	388	4	-0.13
32	3	-0.54	--	--	252			
45	0	-2.70	--	--	220			
46	4	-0.40	--	--	254			
50	4	0.20	--	--	263			
59	4	-0.34	--	--	255			
70	3	0.67	--	--	270			
80	3	-0.67	--	--	250			
89	3	-0.88	--	--	247			
100	0	6.34	--	--	354			
105	0	4.59	--	--	328			
113	3	0.67	--	--	270			
118	4	0.27	--	--	264			
134	4	-0.13	--	--	258			
138	4	-0.40	--	--	254			
142	1	-1.96	--	--	231			
146	2	-1.35	--	--	240			
183	1	1.75	--	286	--			
190	4	0.07	--	--	261			
212	2	-1.01	--	--	245			
224	4	0.20	--	--	263			
227	3	0.94	274	--	--			
234	3	-0.81	--	--	248			
247	3	0.88	--	--	273			
256	4	-0.13	--	--	258			
259	4	-0.07	--	--	259			
263	0	-4.18	--	--	198			
266	4	0.40	266	--	--			
273	4	0.13	--	--	262			
276	0	2.50	297	--	--			
277	3	-0.81	--	--	248			
323	3	-0.81	--	--	248			
327	0	-8.97	--	--	127			
328	2	-1.35	--	--	240			

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY			Methods					Statistics		
			0	4	5	6	22	Method Codes		
n =	1	23	1	4	16			00 Other		MPV = 11.7 mg/L
Minimum =	6.02	10.9	12.2	11.4	4.82			04 Inductively coupled plasma		F-pseudosigma = 0.52
Maximum =		24		12.3	12.8			05 Direct current plasma		Rating criterion = 0.59
Median =		11.7			11.6			06 Inductively coupled plasma / mass spectrometry		n = 45
F-pseudosigma =		0.48			0.52			22 Colorimetric		Uh = 12.1
										Lh = 11.4
Method Codes										
Lab	Rating	Z-value	0	4	5	6	22	Lab	Rating	Z-value
1	3	-0.51	--	--	--	--	11.4	327	2	-1.20
5	4	0.00	--	11.7	--	--	--	328	4	0.34
8	4	-0.34	--	11.5	--	--	--	333	2	1.03
10	3	-0.51	--	--	--	--	11.4	377	3	-0.68
18	3	-0.68	--	--	--	--	11.3	386	0	21.03
24	3	0.85	--	12.2	--	--	--			
25	4	-0.38	--	11.48	--	--	--			
30	3	0.51	--	--	--	12	--			
32	2	1.03	--	--	--	12.3	--			
33	3	0.85	--	--	12.2	--	--			
38	4	-0.27	--	--	--	--	11.54			
42	2	-1.37	--	10.9	--	--	--			
45	3	-0.51	--	--	--	11.4	--			
50	3	-0.68	--	11.3	--	--	--			
59	4	0.00	--	--	--	--	11.7			
64	4	-0.34	--	11.5	--	--	--			
70	4	0.34	--	--	--	--	11.9			
100	0	3.25	--	13.6	--	--	--			
102	2	-1.03	--	--	--	--	11.1			
105	4	0.08	--	11.75	--	--	--			
113	4	-0.17	--	--	--	--	11.6			
134	4	-0.17	--	11.6	--	--	--			
138	2	1.03	--	--	--	12.3	--			
142	2	1.03	--	12.3	--	--	--			
190	4	0.00	--	--	--	--	11.7			
193	2	1.20	--	--	--	--	12.4			
212	4	0.34	--	11.9	--	--	--			
219	3	-0.68	--	11.3	--	--	--			
224	0	-10.11	--	--	--	--	5.784			
230	3	0.51	--	--	--	12	--			
234	4	-0.34	--	11.5	--	--	--			
247	1	1.88	--	--	--	--	12.8			
256	4	0.00	--	11.7	--	--	--			
259	3	0.68	--	12.1	--	--	--			
265	4	-0.34	--	11.5	--	--	--			
266	4	0.34	--	--	--	--	11.9			
273	0	2.19	--	12.98	--	--	--			
274	0	-11.76	--	--	--	--	4.82			
301	0	-9.71	6.02	--	--	--	--			
323	4	-0.17	--	11.6	--	--	--			

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

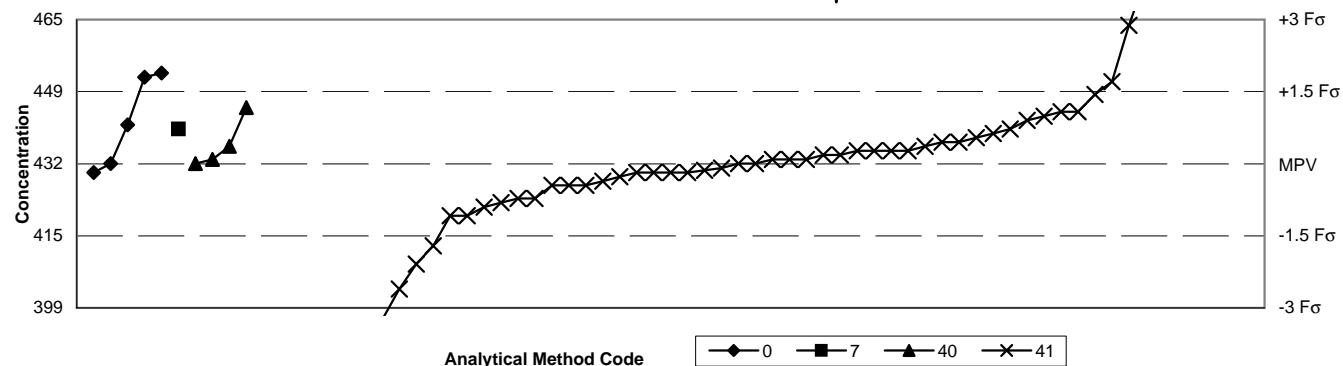


SUMMARY	Methods							Method Codes	Statistics		
	0	5	6	7	20	22	50	51	MPV =	56.2 mg/L	
n =	2	1	2	44	1	9	2	7	00 Other	F-pseudosigma =	2.05
Minimum =	20.4	56.8	56.36	9.246	54.9	53.3	56.07	52 05 Direct current plasma	Rating criterion =	2.81	
Maximum =	54.47			59.8	60.52		58.95	57.6	59.4 06 Inductively coupled plasma / mass spectrometry		
Median =					56.5		55.5	58.1 07 Ion chromatography	n =	68	
F-pseudosigma =				1.82			2.89	20 Titration: colorimetric	Uh =	57.3	
								22 Colorimetric	Lh =	54.5	
								50 Gravimetric			
								51 Turbidimetric			

Lab	Rating	Z-value	Method Codes						Method Codes								
			0	5	6	7	20	22	50	51	0	5	6	7	20	22	50
1	4	-0.40	--	--	--	55.09	--	--	--	--							--
4	3	0.88	--	--	--	58.7	--	--	--	--							--
5	2	-1.24	--	--	--	52.74	--	--	--	--							--
8	3	-0.93	--	--	--	53.6	--	--	--	--							--
10	4	0.39	--	--	--	57.3	--	--	--	--							--
12	3	-0.79	--	--	--	--	--	54	--	--							
16	2	1.13	--	--	--	--	--	--	--	59.4							
18	3	-0.65	--	--	--	--	--	54.4	--	--							57
24	4	-0.25	--	--	--	--	--	55.5	--	--							--
25	3	-0.68	--	--	--	54.3	--	--	--	--							--
30	4	0.39	--	--	--	57.3	--	--	--	--							--
32	4	0.10	--	--	--	56.5	--	--	--	--							--
33	1	1.53	--	--	--	60.52	--	--	--	--							--
42	4	0.31	--	--	--	57.1	--	--	--	--							54.4
45	2	1.28	--	--	59.8	--	--	--	--	--							--
46	3	0.74	--	--	--	--	--	58.3	--	--							--
50	2	1.13	--	--	--	59.4	--	--	--	--							--
59	4	0.10	--	--	--	56.5	--	--	--	--							--
64	4	0.21	--	--	--	56.8	--	--	--	--							--
70	2	-1.07	--	--	--	53.2	--	--	--	--							--
76	4	0.05	--	--	56.36	--	--	--	--	--							--
80	4	-0.47	--	--	--	--	54.9	--	--	--							--
89	3	-0.68	--	--	--	54.3	--	--	--	--							--
100	4	0.39	--	--	--	57.3	--	--	--	--							--
102	3	0.64	--	--	--	58	--	--	--	--							58.4
105	4	0.14	--	--	--	56.6	--	--	--	--							--
113	3	-0.89	--	--	--	53.7	--	--	--	--							--
134	4	-0.15	--	--	--	55.8	--	--	--	--							--
138	4	0.42	--	--	--	57.4	--	--	--	--							--
142	4	-0.15	--	--	--	55.8	--	--	--	--							--
146	4	0.28	--	--	--	57	--	--	--	--							--
149	4	0.39	--	--	--	57.3	--	--	--	--							--
180	2	1.03	--	--	--	59.1	--	--	--	--							--
183	3	-0.57	--	--	--	--	--	54.6	--	--							--
190	3	-0.72	--	--	--	54.2	--	--	--	--							--
208	4	-0.47	--	--	--	54.9	--	--	--	--							--
212	4	-0.29	--	--	--	55.4	--	--	--	--							--
219	3	-0.57	--	--	--	54.61	--	--	--	58.95	--	--					--
220	3	0.97	--	--	--	--	--	--	--	--							--
230	4	0.21	--	--	--	56.8	--	--	--	--							--

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

M-166 SPECIFIC CONDUCTANCE in $\mu\text{S}/\text{cm}$



SUMMARY					Methods				Statistics			
					Method Codes							
					0	7	40	41	00 Other	40 Ion selective electrode	41 Electrometric	MPV = 432 $\mu\text{S}/\text{cm}$
n =	5	1	4	55								F-pseudosigma = 11.1
Minimum =	430	440	432	40.8	07 Ion chromatography							Rating criterion = 21.6
Maximum =	453	445	486		40 Ion selective electrode							n = 65
Median =	441		431		41 Electrometric							Uh = 439
F-pseudosigma =	14.8		10.7									Lh = 424

Lab	Rating	Z-value	Method Codes				Method Codes			
			0	7	40	41	0	7	40	41
1	2	-1.07	--	--	--	408.8	230	4	-0.37	--
5	4	-0.09	--	--	--	430	234	4	-0.37	--
8	1	-1.85	--	--	--	392	247	4	0.14	--
10	4	0.05	--	--	--	433	256	3	0.88	--
12	0	2.50	--	--	--	486	259	4	0.00	--
16	4	-0.09	--	--	--	430	263	4	0.14	--
18	0	-2.73	--	--	--	373	266	4	-0.23	--
24	4	0.14	--	--	--	435	269	4	0.05	--
25	4	-0.09	--	--	--	430	273	4	0.51	--
32	3	0.56	--	--	--	444	274	3	-0.56	--
33	0	2.09	--	--	--	477.1	276	4	-0.09	430
38	4	-0.07	--	--	--	430.5	277	1	-1.67	--
42	0	-6.02	--	--	--	302	307	3	-0.56	--
45	4	0.23	--	--	--	437	321	1	1.99	--
46	4	-0.05	--	--	--	431	323	4	-0.09	--
50	4	0.19	--	--	--	436	327	3	0.56	--
59	4	0.05	--	--	--	433	328	4	-0.14	--
64	2	1.48	--	--	--	464	333	4	0.37	--
70	4	0.14	--	--	--	435	341	4	0.23	--
76	4	0.05	--	--	433	--	356	4	0.28	--
80	4	0.09	--	--	--	434	366	4	0.42	441
86	3	0.93	452	--	--	--	377	4	0.37	--
89	0	-4.54	--	--	--	334	379	4	0.19	--
91	3	-0.88	--	--	--	413	386	4	0.09	--
100	4	-0.46	--	--	--	422	389	0	-3.33	--
102	3	0.97	453	--	--	--				
105	4	-0.23	--	--	--	427				
113	3	0.74	--	--	--	448				
118	4	-0.42	--	--	--	423				
134	4	0.00	--	--	--	432				
138	4	0.32	--	--	--	439				
142	4	0.46	--	--	--	442				
146	0	-2.41	--	--	--	380				
180	4	-0.19	--	--	--	428				
183	3	0.60	--	--	445	--				
190	4	0.00	--	--	432	--				
193	0	-18.11	--	--	--	40.8				
212	2	-1.34	--	--	--	403				
224	4	-0.23	--	--	--	427				
227	4	0.00	432	--	--	--				

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

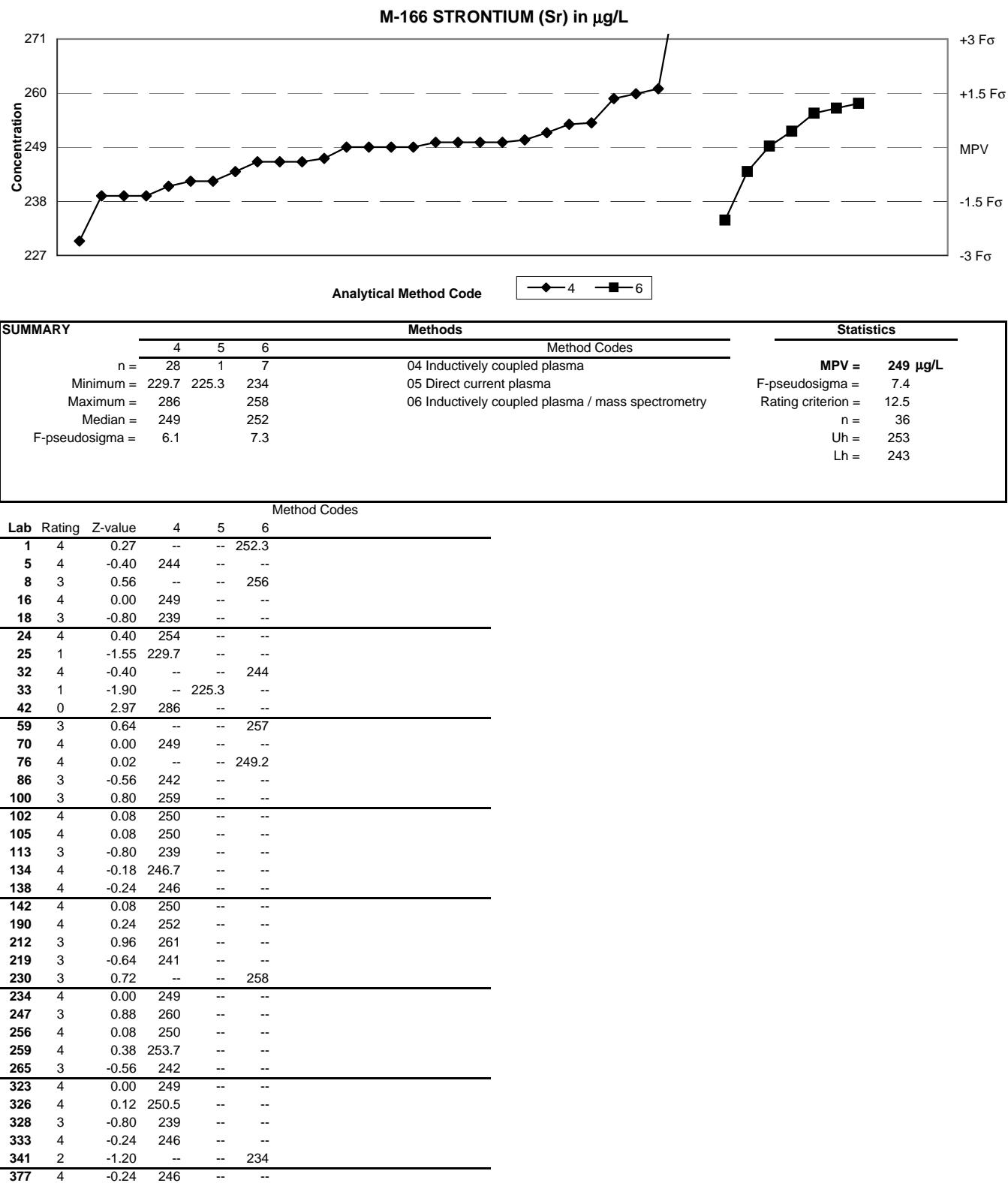
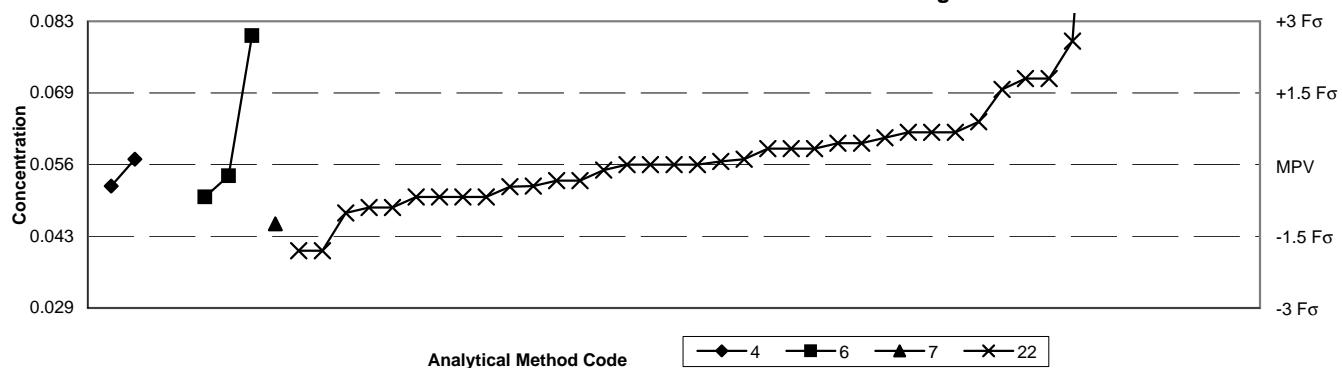


Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued

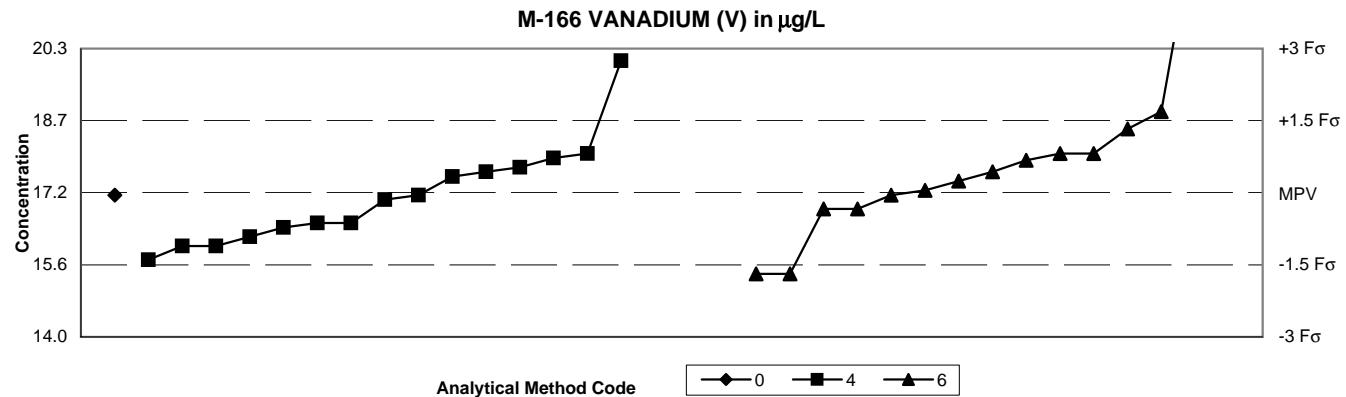
M-166 TOTAL PHOSPHORUS as PHOSPHORUS in mg/L



SUMMARY	Methods				Method Codes	Statistics			
	4	6	7	22					
n =	2	3	1	36	04 Inductively coupled plasma	MPV =	0.056 mg/L		
Minimum =	0.052	0.05	0.045	0.04	06 Inductively coupled plasma / mass spectrometry	F-pseudosigma =	0.0089		
Maximum =	0.057	0.08		0.15	07 Ion chromatography	n =	42		
Median =			0.056		22 Colorimetric	Uh =	0.062		
F-pseudosigma =			0.0082			Lh =	0.050		

Lab	Rating	Z-value	Method Codes				Lab	Rating	Z-value	Method Codes			
			4	6	7	22				4	6	7	22
5	4	-0.34	--	--	--	0.053	366	3	-0.90	--	--	--	0.048
8	NR	--	<0.5	--	--	--	377	4	0.00	--	--	--	0.056
12	3	-0.67	--	--	--	0.05	379	2	-1.24	--	--	0.045	--
16	4	0.00	--	--	--	0.056	386	3	0.67	--	--	--	0.062
25	3	-0.67	--	--	--	0.05	389	4	0.45	--	--	--	0.06
30	3	-0.67	--	0.05	--	--							
32	1	-1.80	--	--	--	0.04							
33	0	10.57	--	--	--	0.15							
38	4	0.00	--	--	--	0.056							
42	4	0.11	0.057	--	--	--							
45	0	2.70	--	0.08	--	--							
46	4	-0.45	--	--	--	0.052							
64	4	0.34	--	--	--	0.059							
70	4	0.45	--	--	--	0.06							
76	4	-0.24	--	0.054	--	--							
89	4	-0.46	--	--	--	0.052							
102	4	-0.11	--	--	--	0.055							
105	3	-0.67	--	--	--	0.05							
113	4	0.11	--	--	--	0.057							
134	3	0.67	--	--	--	0.062							
138	4	0.07	--	--	--	0.057							
142	2	-1.01	--	--	--	0.047							
146	NR	--	--	--	--	<0.10							
180	4	0.34	--	--	--	0.059							
183	4	0.00	--	--	--	0.056							
190	3	-0.90	--	--	--	0.048							
193	3	0.67	--	--	--	0.062							
212	0	2.59	--	--	--	0.079							
219	NR	--	<0.1	--	--	--							
227	4	-0.45	0.052	--	--	--							
234	1	1.57	--	--	--	0.07							
247	3	-0.67	--	--	--	0.05							
259	4	0.34	--	--	--	0.059							
273	0	9.44	--	--	--	0.14							
274	1	1.80	--	--	--	0.072							
307	1	1.80	--	--	--	0.072							
321	3	0.56	--	--	--	0.061							
323	3	0.90	--	--	--	0.064							
328	1	-1.80	--	--	--	0.04							
341	4	-0.34	--	--	--	0.053							

Table 12. Statistical summary of reported data for standard reference sample M-166 (major constituents) -- continued



SUMMARY		Methods			Statistics	
		0	4	6	Method Codes	
n =		1	15	14	00 Other	MPV = 17.2 µg/L
Minimum =		17.1	15.7	15.4	04 Inductively coupled plasma	F-pseudosigma = 1.04
Maximum =		-	20	23	06 Inductively coupled plasma / mass spectrometry	n = 30
Median =		-	17.0	17.5		Uh = 17.9
F-pseudosigma =		-	1.00	0.89		Lh = 16.5

Lab	Rating	Z-value	Method Codes		
			0	4	6
1	2	1.33	--	--	18.53
5	3	-0.63	--	16.5	--
8	0	5.64	--	--	23
16	3	-0.72	--	16.4	--
18	4	-0.14	--	17	--
24	NR	--	--	<18	--
25	NR	--	--	<19	--
32	4	0.43	--	--	17.6
42	4	0.43	--	17.6	--
45	4	-0.05	--	--	17.1
59	1	1.69	--	--	18.9
70	1	-1.69	--	--	15.4
76	3	0.67	--	--	17.85
86	4	-0.05	17.1	--	--
100	3	0.72	--	17.9	--
105	NR	--	--	<20	--
134	3	-0.63	--	16.5	--
138	2	-1.11	--	16	--
142	4	0.05	--	--	17.2
146	3	0.53	--	17.7	--
149	4	0.24	--	--	17.4
212	4	0.34	--	17.5	--
219	1	-1.69	--	--	15.4
220	3	-0.92	--	16.2	--
230	3	0.82	--	--	18
234	3	0.82	--	18	--
247	0	2.75	--	20	--
256	2	-1.40	--	15.7	--
265	4	-0.34	--	--	16.8
323	3	0.82	--	--	18
328	2	-1.11	--	16	--
341	4	-0.34	--	--	16.8
377	4	-0.05	--	17.1	--

Table 13. Statistical summary of reported data for standard reference sample N-77 (nutrient constituents)

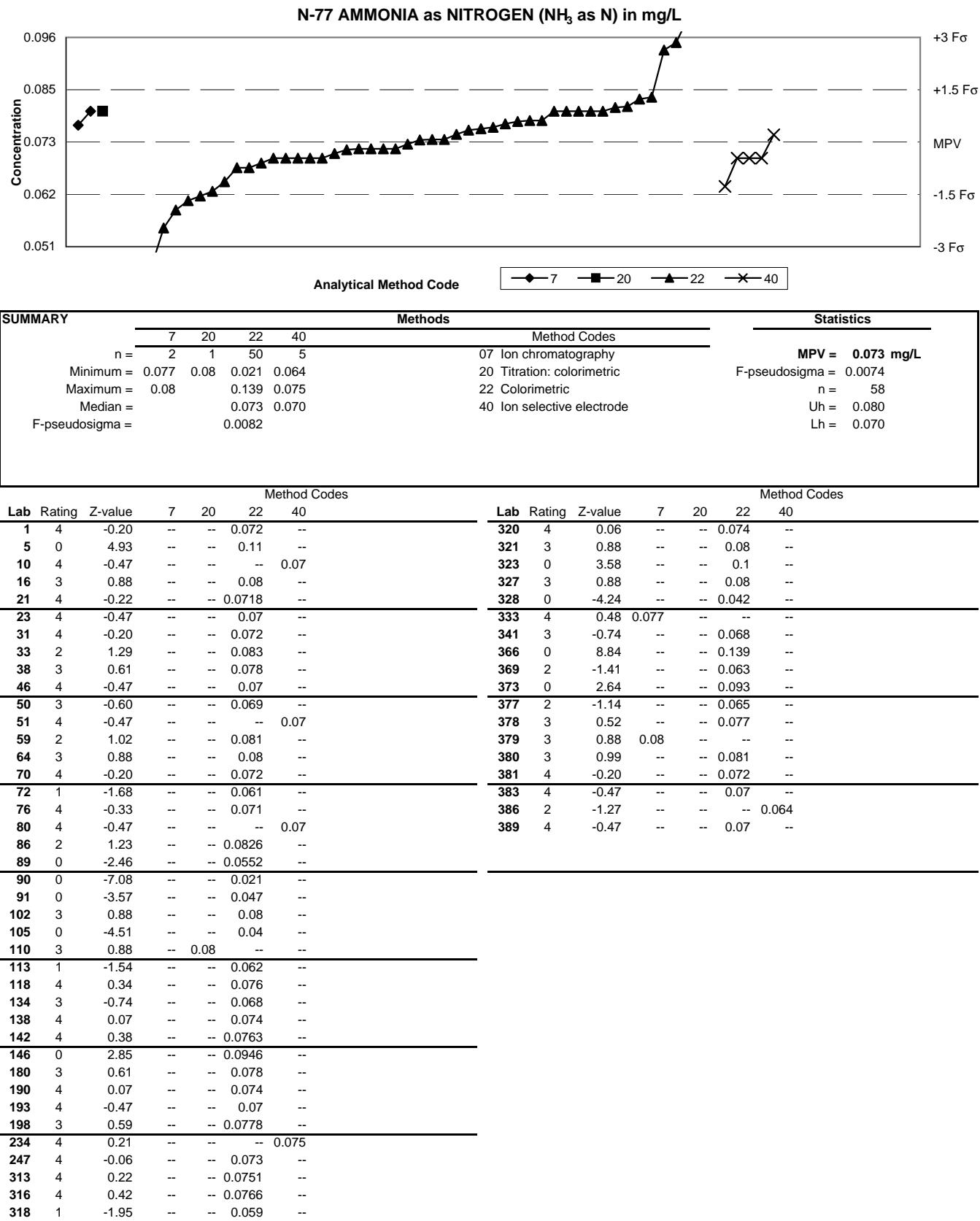


Table 13. Statistical summary of reported data for standard reference sample N-77 (nutrient constituents) -- continued

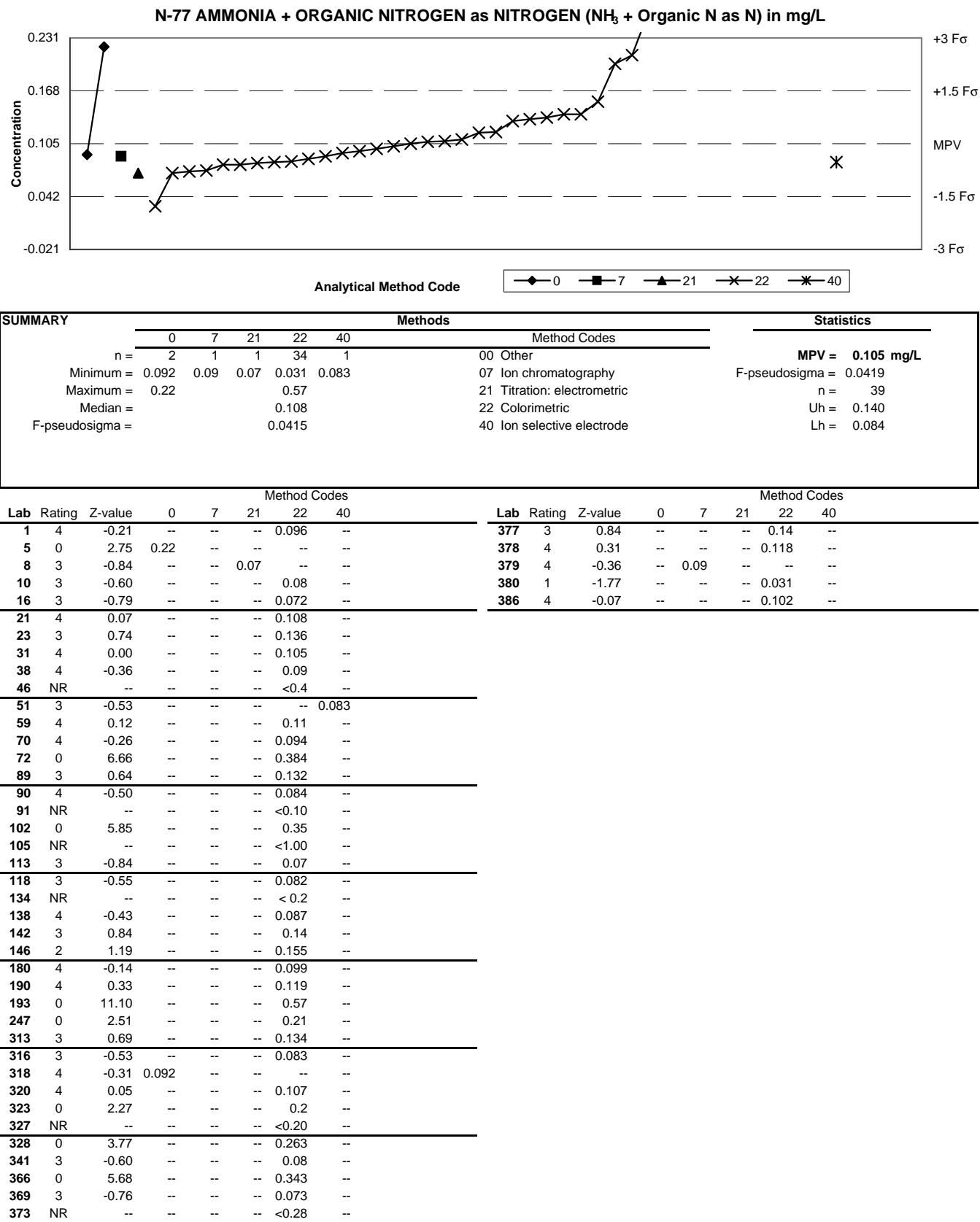
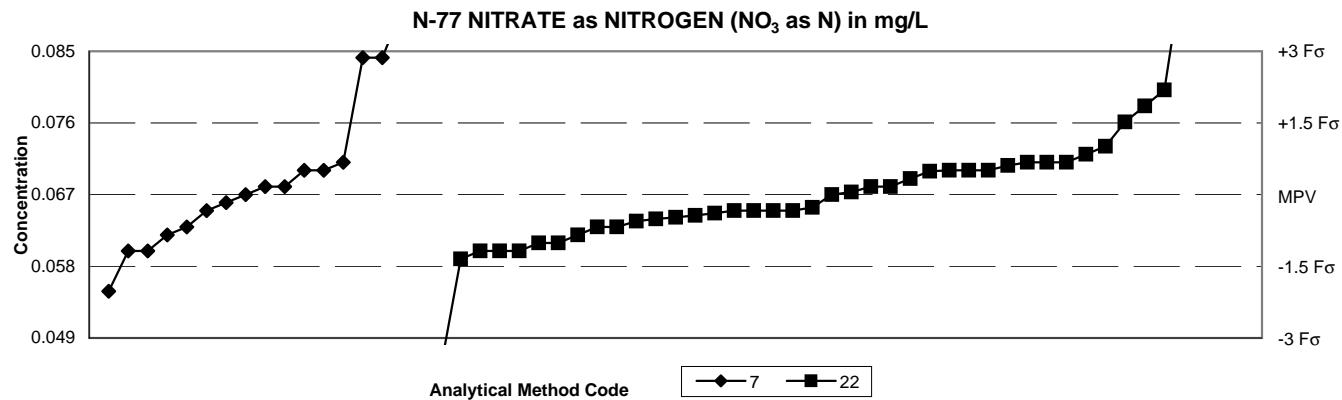


Table 13. Statistical summary of reported data for standard reference sample N-77 (nutrient constituents) -- continued



SUMMARY			Methods				Statistics		
			Method Codes		Method Codes				
			7	22	07	22			
n =	17	40					MPV =	0.067 mg/L	
Minimum =	0.055	0.046					F-pseudosigma =	0.0059	
Maximum =	0.092	0.65					n =	57	
Median =	0.068	0.066					Uh =	0.071	
F-pseudosigma =	0.0059	0.0055					Lh =	0.063	
Method Codes									
Lab	Rating	Z-value	7	22	Method Codes	Lab	Rating	Z-value	7
1	3	-0.67	--	0.063		318	4	0.17	--
5	2	-1.01	--	0.061		320	3	-0.56	--
8	0	-2.02	0.055	--		321	2	-1.18	0.06
10	3	0.67	--	0.071		323	4	0.05	--
16	2	1.01	--	0.073		328	2	-1.18	--
21	4	-0.39	--	0.065		333	4	0.00	0.067
23	NR	--	--	<0.10		341	4	-0.34	--
31	4	0.34	--	0.069		366	1	1.52	--
33	0	2.87	0.084	--		369	2	-1.01	--
38	4	-0.34	--	0.065		373	1	1.85	--
42	3	-0.67	0.063	--		377	3	0.67	--
45	0	4.22	0.092	--		378	4	-0.47	--
46	3	0.67	0.071	--		379	4	-0.34	0.065
51	2	-1.18	0.06	--		380	2	-1.18	--
59	4	0.17	--	0.068		381	4	-0.34	--
64	4	0.51	--	0.07		383	4	0.51	0.07
70	4	-0.34	--	0.065		386	2	-1.35	--
72	2	-1.18	--	0.06		389	0	2.19	--
80	0	98.31	--	0.65					0.08
86	0	-3.57	--	0.046					
89	3	-0.67	--	0.063					
90	4	0.51	--	0.07					
91	3	0.84	--	0.072					
102	0	2.87	0.084	--					
105	4	0.51	0.07	--					
110	4	0.17	0.068	--					
113	4	0.00	--	0.067					
118	3	0.67	--	0.071					
134	3	-0.84	--	0.062					
138	4	-0.17	0.066	--					
142	3	0.61	--	0.071					
146	0	4.86	--	0.096					
180	3	-0.84	0.062	--					
190	4	-0.51	--	0.064					
193	4	0.51	--	0.07					
198	4	-0.27	--	0.065					
234	4	0.17	0.068	--					
247	0	3.88	0.09	--					
313	4	0.49	--	0.07					
316	4	-0.44	--	0.064					

Table 13. Statistical summary of reported data for standard reference sample N-77 (nutrient constituents) -- continued

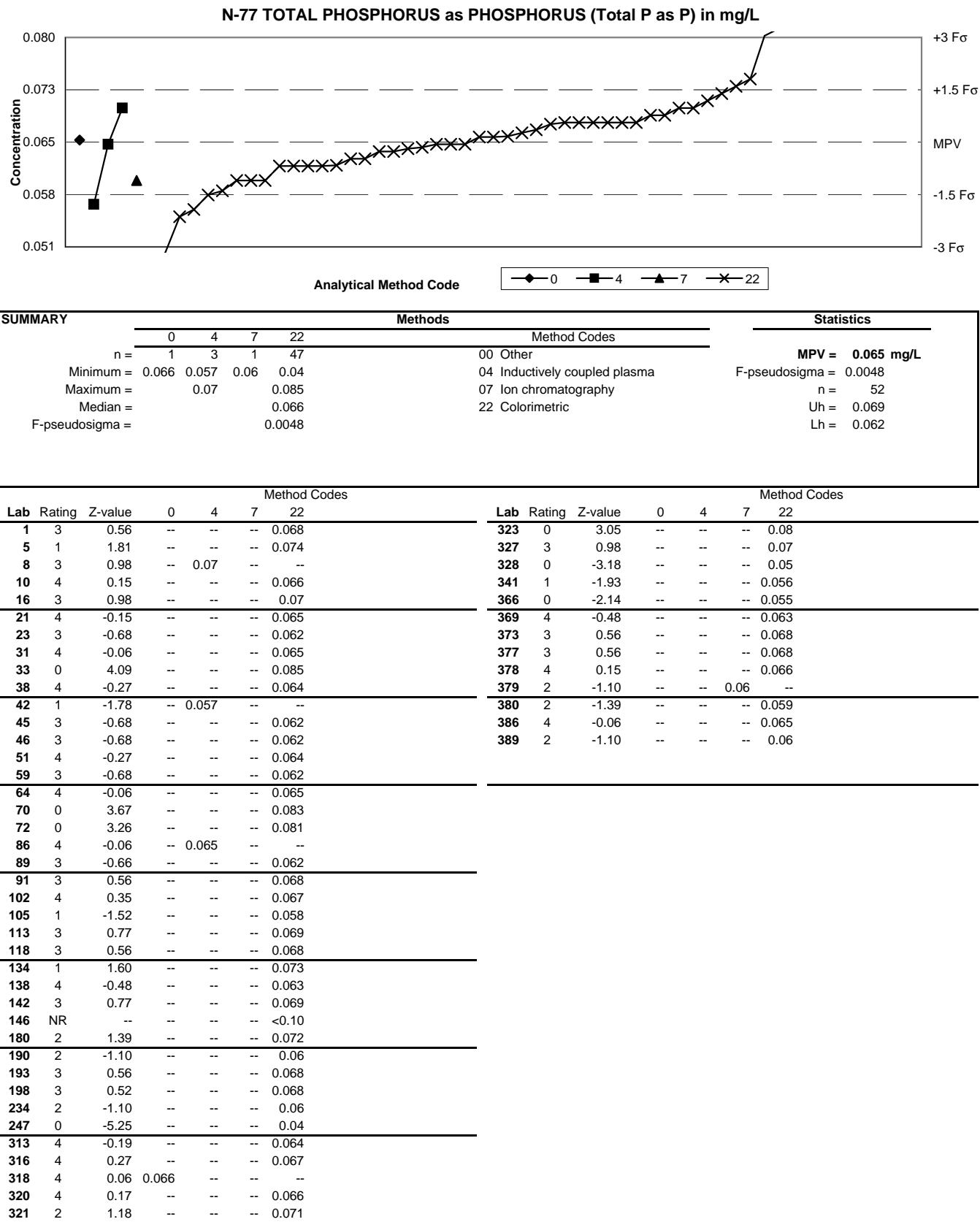


Table 13. Statistical summary of reported data for standard reference sample N-77 (nutrient constituents) -- continued

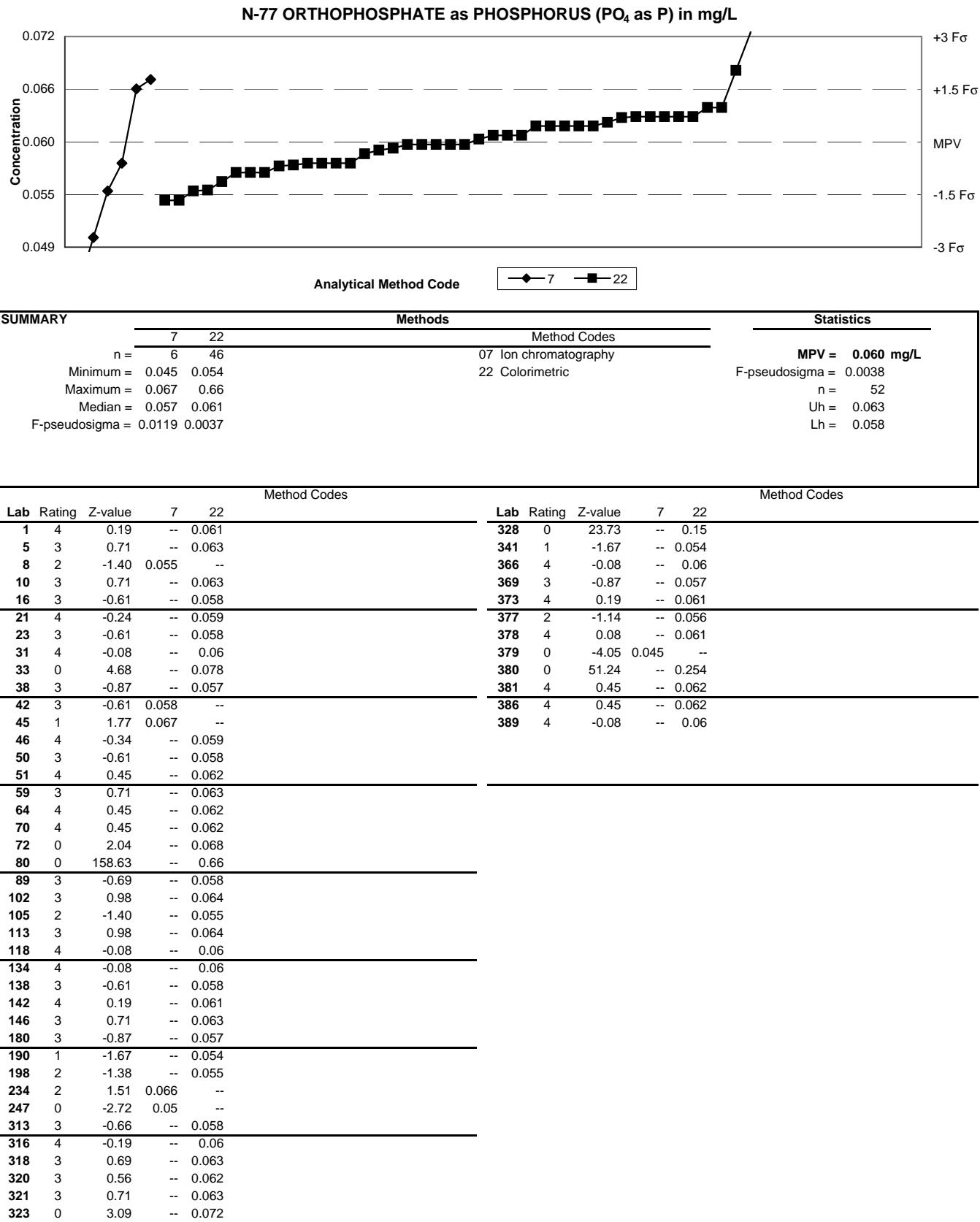
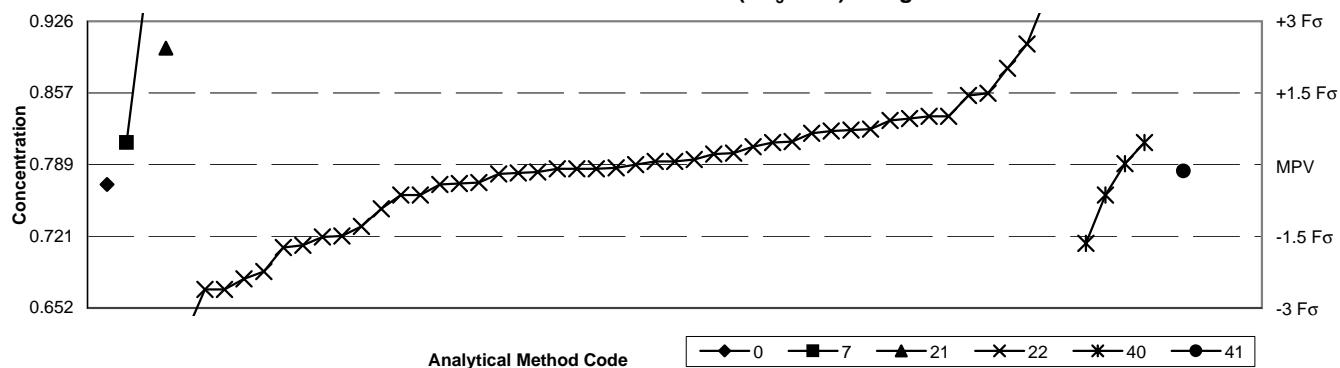


Table 14. Statistical summary of reported data for standard reference sample N-78 (nutrient constituents)

N-78 AMMONIA as NITROGEN (NH_3 as N) in mg/L



SUMMARY	Methods						Statistics	
	0	7	21	22	40	41	Method Codes	MPV = 0.789 mg/L
n =	1	2	1	46	4	1	00 Other	F-pseudosigma = 0.0456
Minimum =	0.77	0.81	0.9	0.627	0.714	0.783	07 Ion chromatography	n = 55
Maximum =				0.952	0.81		21 Titration: electrometric	Uh = 0.822
Median =				0.788			22 Colorimetric	Lh = 0.760
F-pseudosigma =				0.0460			40 Ion selective electrode	
							41 Electrometric	

Lab	Rating	Z-value	Method Codes						Method Codes						
			0	7	21	22	40	41	0	7	21	22	40	41	
1	4	-0.39	--	--	--	0.771	--	--	247	4	-0.09	--	--	0.785	--
5	3	1.01	--	--	--	0.835	--	--	307	4	-0.13	--	--	--	0.783
8	0	2.43	--	--	0.9	--	--	--	313	4	-0.37	--	--	0.772	--
10	4	0.46	--	--	--	--	0.81	--	320	3	1.01	--	--	0.835	--
16	4	-0.42	--	--	--	0.77	--	--	323	0	3.53	--	--	0.95	--
18	1	-1.73	--	--	--	0.71	--	--	327	3	-0.64	--	--	0.76	--
23	0	-2.39	--	--	--	0.68	--	--	328	4	0.46	--	--	0.81	--
26	0	3.75	--	0.96	--	--	--	--	341	4	-0.07	--	--	0.786	--
33	0	2.02	--	--	--	0.881	--	--	356	4	-0.18	--	--	0.781	--
38	3	0.97	--	--	--	0.833	--	--	366	3	0.75	--	--	0.823	--
46	4	0.07	--	--	--	0.792	--	--	373	3	0.66	--	--	0.819	--
50	4	-0.15	--	--	--	0.782	--	--	378	0	2.52	--	--	0.904	--
59	4	0.11	--	--	--	0.794	--	--	379	4	0.46	--	0.81	--	--
64	4	0.24	--	--	--	0.8	--	--	380	2	1.45	--	--	0.855	--
70	0	-2.61	--	--	--	0.67	--	--	383	4	-0.42	0.77	--	--	--
72	3	0.92	--	--	--	0.831	--	--	386	1	-1.65	--	--	--	0.714
76	4	0.00	--	--	--	0.789	--	--							
80	3	-0.64	--	--	--	--	0.76	--							
86	4	0.07	--	--	--	0.792	--	--							
89	0	-3.55	--	--	--	0.627	--	--							
90	2	-1.49	--	--	--	0.721	--	--							
91	0	-2.24	--	--	--	0.687	--	--							
102	1	-1.51	--	--	--	0.72	--	--							
105	2	-1.29	--	--	--	0.73	--	--							
113	4	0.37	--	--	--	0.806	--	--							
118	4	0.22	--	--	--	0.799	--	--							
134	4	-0.09	--	--	--	0.785	--	--							
138	4	0.48	--	--	--	0.811	--	--							
142	1	-1.69	--	--	--	0.712	--	--							
146	3	0.70	--	--	--	0.821	--	--							
180	3	0.72	--	--	--	0.822	--	--							
183	NR	--	--	--	--	<1	--	--							
190	4	-0.09	--	--	--	0.785	--	--							
193	4	-0.20	--	--	--	0.78	--	--							
198	2	1.49	--	--	--	0.857	--	--							
205	0	3.58	--	--	--	0.952	--	--							
212	0	-2.61	--	--	--	0.67	--	--							
220	3	-0.92	--	--	--	0.747	--	--							
227	3	-0.64	--	--	--	0.76	--	--							
234	4	0.02	--	--	--	--	0.79	--							

Table 14. Statistical summary of reported data for standard reference sample N-78 (nutrient constituents) -- continued

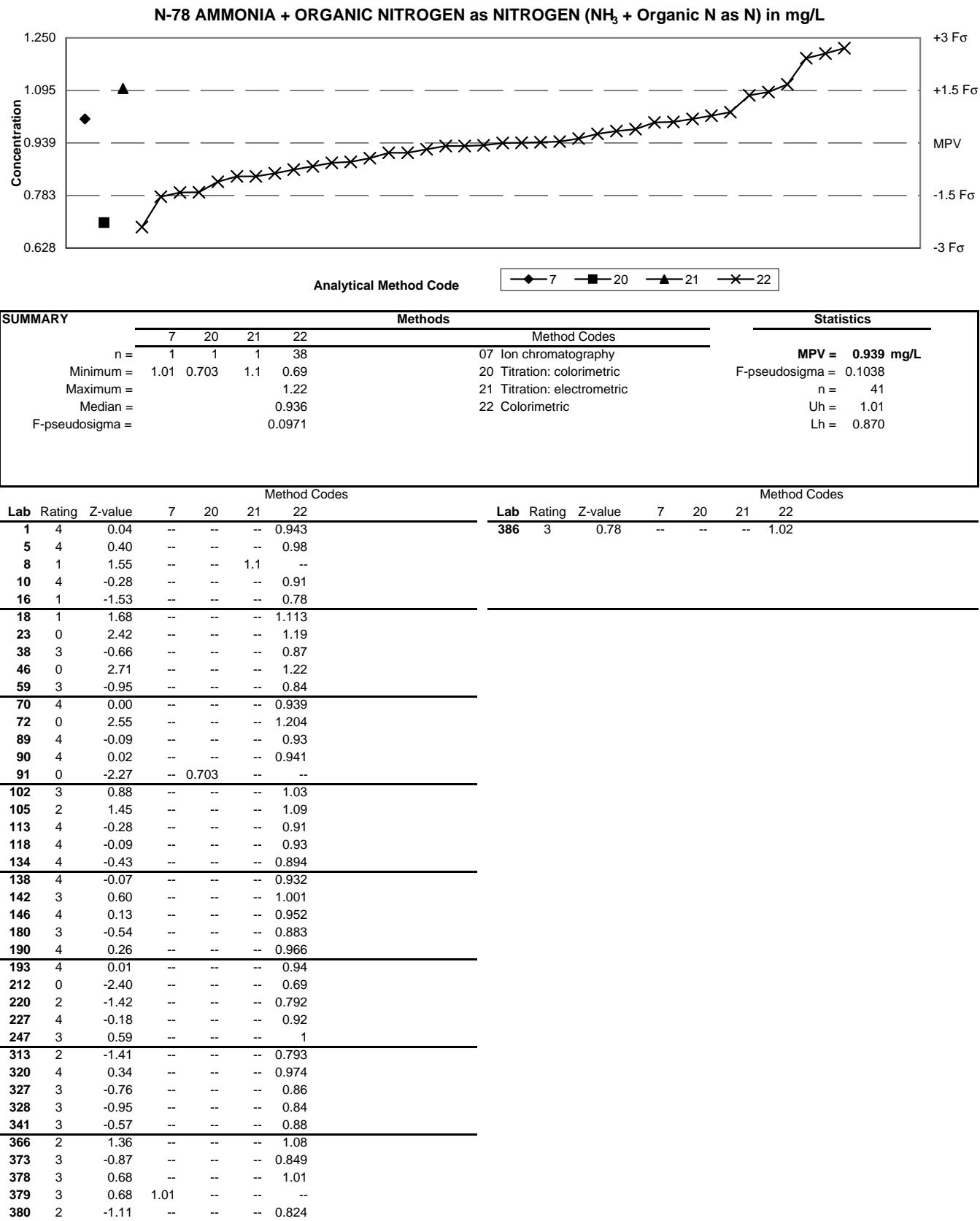
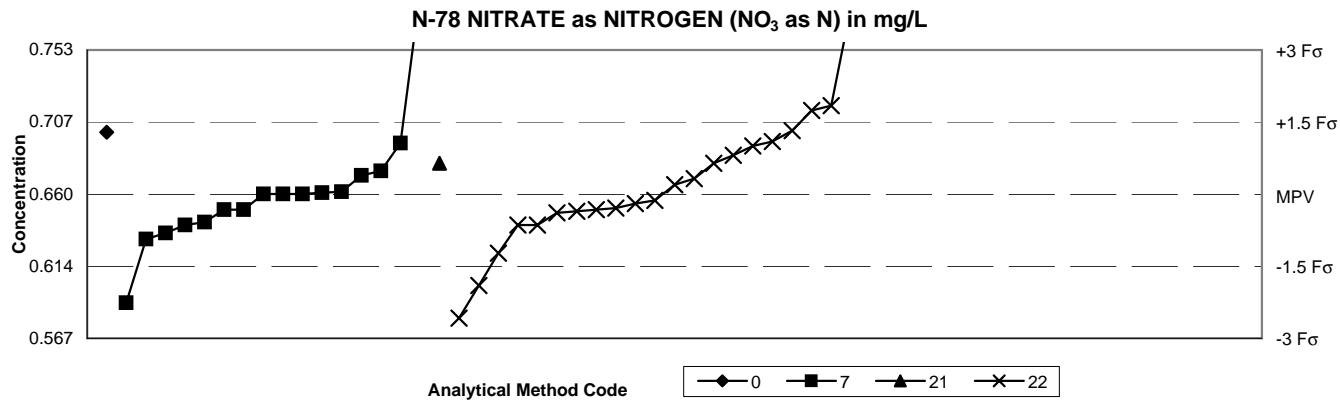


Table 14. Statistical summary of reported data for standard reference sample N-78 (nutrient constituents) -- continued



SUMMARY		Methods					Statistics	
		0	7	21	22	40	Method Codes	
n =		1	16	1	22	0	00 Other	
Minimum =		0.7	0.59	0.68	0.58		07 Ion chromatography	F-pseudosigma = 0.0310
Maximum =				0.79	0.784		21 Titration: electrometric	Rating criterion = 0.0330
Median =				0.660	0.661		22 Colorimetric	n = 40
F-pseudosigma =				0.0191	0.0340		40 Ion selective electrode	Uh = 0.688
								Lh = 0.646

* Removed data points after determining that NO_2+NO_3 was reported

Lab	Rating	Z-value	Method Codes				Method Codes			
			0	7	21	22	40	0	7	21
1	4	-0.18	--	--	--	0.654	--	220	4	0.30
5	2	1.24	--	--	--	0.701	--	227	3	-0.55
8	0	3.94	--	0.79	--	--	--	234	4	0.03
*10	0	5.88	--	--	--	0.854	--	247	3	-0.61
16	3	-0.61	--	--	--	0.64	--	307	1	-1.79
*18	0	6.58	--	--	--	0.877	--	313	1	1.73
*23	0	8.18	--	--	--	0.93	--	320	4	-0.36
26	0	-2.12	--	0.59	--	--	--	*323	0	6.97
30	3	1.00	--	0.693	--	--	--	341	2	-1.15
33	4	-0.30	--	0.65	--	--	--	356	3	0.61
*38	0	6.24	--	--	--	0.866	--	366	4	-0.12
42	3	-0.76	--	0.635	--	--	--	373	4	0.18
45	4	0.36	--	0.672	--	--	--	378	3	0.76
46	3	-0.88	--	0.631	--	--	--	379	4	0.00
*59	0	6.76	--	--	--	0.883	--	380	0	-2.42
*64	0	7.58	--	--	--	0.91	--	383	2	1.21
70	4	-0.30	--	--	--	0.65	--	*386	0	7.48
72	2	1.03	--	--	--	0.694	--			
76	4	0.05	--	0.662	--	--	--			
80	0	3.64	--	--	--	0.78	--			
*86	0	5.58	--	--	--	0.844	--			
*89	0	6.45	--	--	--	0.873	--			
*90	0	6.85	--	--	--	0.886	--			
*91	0	6.76	--	--	--	0.883	--			
102	4	-0.30	--	0.65	--	--	--			
105	3	-0.61	--	--	--	0.64	--			
113	4	-0.33	--	--	--	0.649	--			
118	3	0.94	--	--	--	0.691	--			
134	3	0.61	--	--	--	0.68	--			
138	4	0.00	--	0.66	--	--	--			
*142	0	6.33	--	--	--	0.869	--			
*146	0	6.61	--	--	--	0.878	--			
180	4	0.45	--	0.675	--	--	--			
183	NR	--	--	--	--	--	<1			
190	4	-0.27	--	--	--	0.651	--			
*193	0	6.36	--	--	--	0.87	--			
198	1	1.64	--	--	--	0.714	--			
205	0	3.76	--	--	--	0.784	--			
208	4	0.00	--	0.66	--	--	--			
*212	0	6.06	--	--	--	0.86	--			

Table 14. Statistical summary of reported data for standard reference sample N-78 (nutrient constituents) -- continued

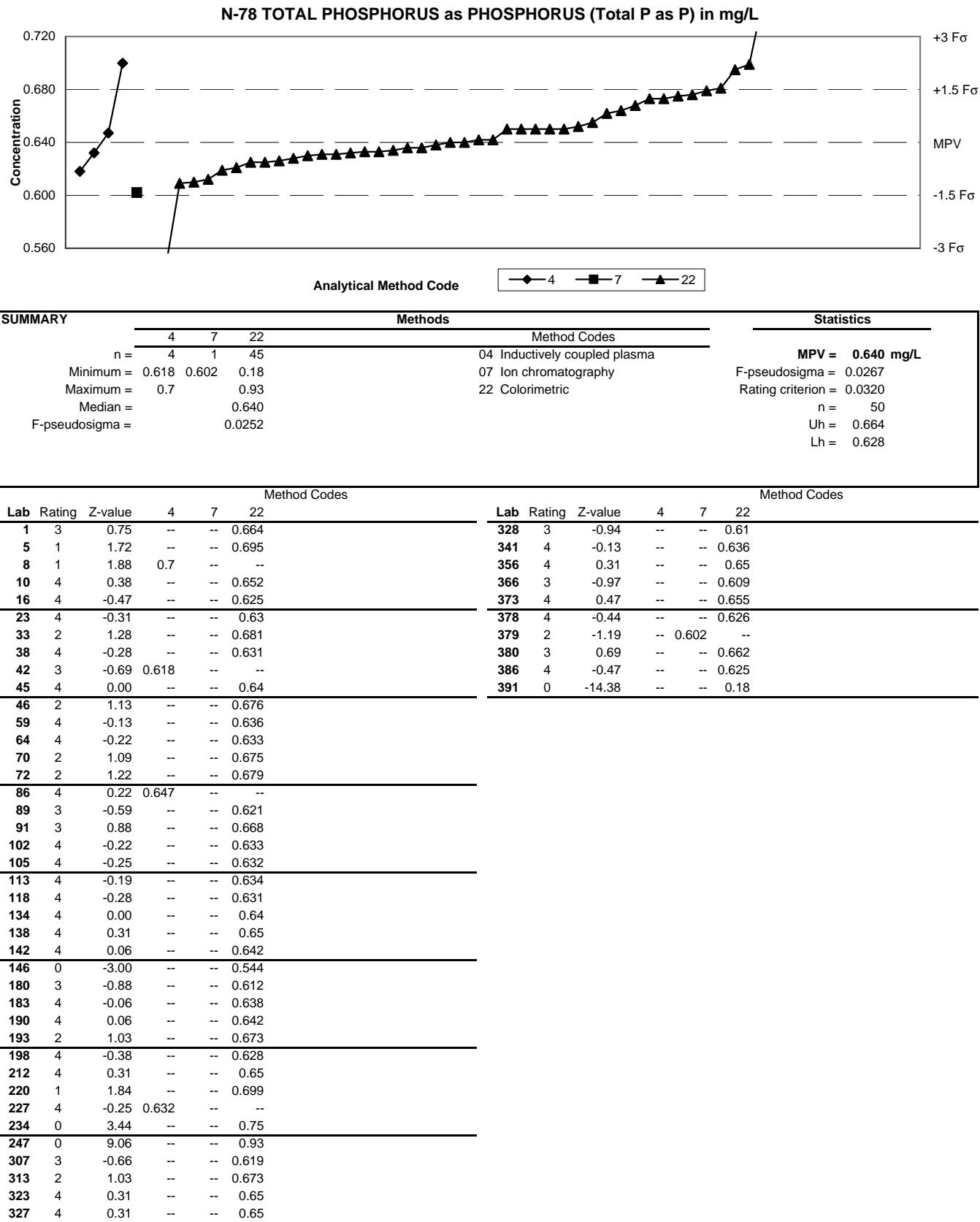
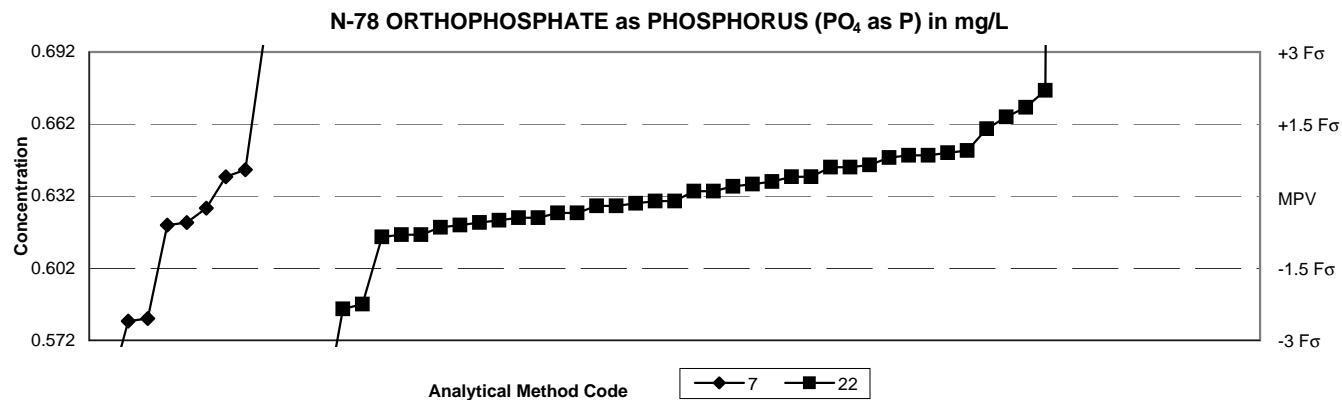


Table 14. Statistical summary of reported data for standard reference sample N-78 (nutrient constituents) -- continued



SUMMARY			Methods				Statistics		
			Method Codes		Method Codes				
			7	22	07	22			
n =	10	40					MPV =	0.632 mg/L	
Minimum =	0.55	0.54					F-pseudosigma =	0.0200	
Maximum =	0.713	2.93					Rating criterion =	0.0316	
Median =	0.624	0.634					n =	50	
F-pseudosigma =	0.0460	0.0193					Uh =	0.648	
							Lh =	0.621	
Method Codes									
Lab	Rating	Z-value	7	22	Lab	Rating	Z-value	7	22
1	4	-0.06	--	0.63	313	4	-0.06	--	0.63
5	3	0.54	--	0.649	323	4	-0.09	--	0.629
8	0	2.15	0.7	--	328	0	39.18	--	1.87
10	4	0.51	--	0.648	341	2	-1.49	--	0.585
16	4	0.16	--	0.637	356	4	-0.41	--	0.619
18	4	0.06	--	0.634	366	4	-0.51	--	0.616
23	4	-0.38	--	0.62	373	4	0.41	--	0.645
26	0	-2.59	0.55	--	378	4	-0.35	--	0.621
30	4	0.35	0.643	--	379	1	-1.65	0.58	--
33	3	0.54	--	0.649	380	0	72.72	--	2.93
38	4	-0.32	--	0.622	386	2	-1.42	--	0.587
42	4	-0.35	0.621	--					
45	4	-0.16	0.627	--					
46	2	1.39	--	0.676					
50	4	0.13	--	0.636					
59	4	0.25	--	0.64					
64	4	-0.28	--	0.623					
70	4	0.38	--	0.644					
72	4	0.19	--	0.638					
80	3	0.89	--	0.66					
86	1	-1.61	0.581	--					
89	4	0.38	--	0.644					
102	4	0.25	--	0.64					
105	4	-0.13	--	0.628					
113	4	-0.22	--	0.625					
118	4	-0.13	--	0.628					
134	4	-0.22	--	0.625					
138	4	0.06	--	0.634					
142	2	1.17	--	0.669					
146	2	1.04	--	0.665					
180	3	0.60	--	0.651					
183	3	-0.54	--	0.615					
190	4	-0.28	--	0.623					
198	4	-0.51	--	0.616					
208	0	-4.18	<0.5	--					
212	0	-2.91	--	0.54					
220	4	-0.38	0.62	--					
227	3	0.57	--	0.65					
234	0	2.56	0.713	--					
247	4	0.25	0.64	--					

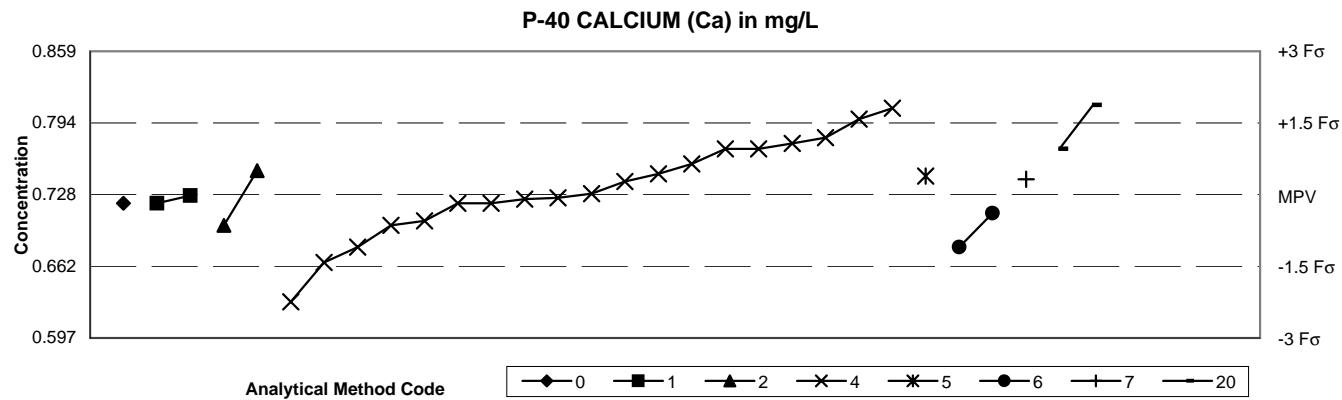
Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)

P-40 ACIDITY (as CaCO₃) in mg/L

SUMMARY			Methods		Statistics
			20	21	Method Codes
n =	2	4			20 Titration: colorimetric 21 Titration: electrometric
Minimum =	4	2.3			
Maximum =	10	19			
Median =					
F-pseudosigma =					

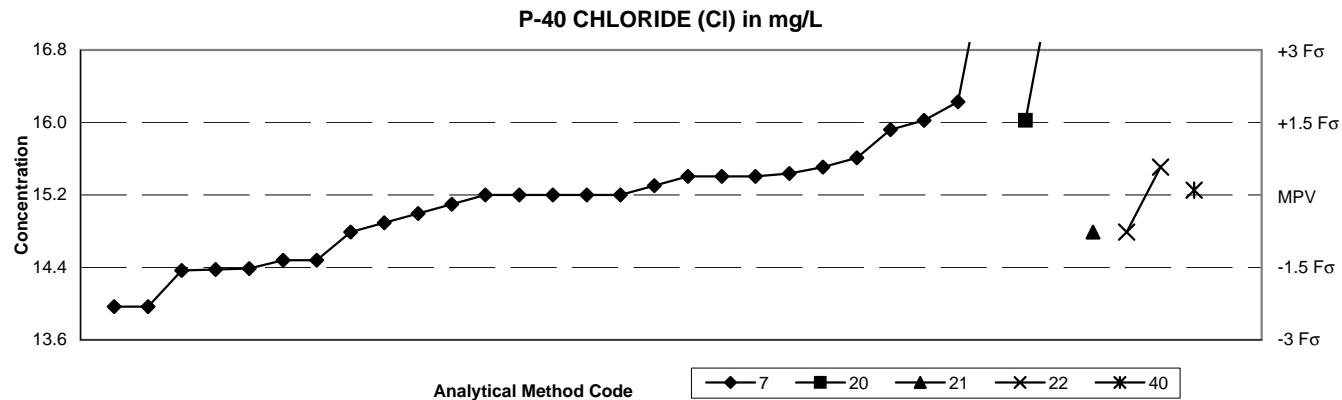
Lab	Rating	Z-value	Method Codes		
			20	21	
8	NR	--	--	<20	
25	NR	--	--	< 8	
89	NR	--	--	2.3	
105	NR	--	--	10.6	
247	NR	--	--	19	
273	NR	--	--	4.18	
274	NR	--	4	--	
328	NR	--	10	--	

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued



SUMMARY			Methods								Statistics		
			0	1	2	4	5	6	7	20	Method Codes		
n =	1	2	2	19	1	2	1	2	00	Other	MPV =	0.728 mg/L	
Minimum =	0.72	0.72	0.7	0.63	0.745	0.68	0.742	0.77	01	Atomic absorption: direct, air	F-pseudosigma =	0.0437	
Maximum =									0.81	02 Atomic absorption: direct, nitrous oxide	n =	30	
Median =					0.729				04	Inductively coupled plasma	Uh =	0.770	
F-pseudosigma =				0.0430					05	Direct current plasma	Lh =	0.711	
									06	Inductively coupled plasma / mass spectrometry			
									07	Ion chromatography			
									20	Titration: colorimetric			
Method Codes													
Lab	Rating	Z-value	0	1	2	4	5	6	7	20			
1	2	-1.42	--	--	--	0.666	--	--	--	--			
2	4	0.32	--	--	--	--	--	--	0.742	--			
5	4	-0.07	--	--	--	0.725	--	--	--	--			
8	2	1.19	--	--	--	0.78	--	--	--	--			
23	3	-0.64	--	--	0.7	--	--	--	--	--			
25	1	1.81	--	--	--	0.807	--	--	--	--			
33	4	0.39	--	--	--	--	0.745	--	--	--			
38	4	0.50	--	--	0.75	--	--	--	--	--			
45	4	-0.39	--	--	--	--	--	0.711	--	--			
46	4	0.02	--	--	--	0.729	--	--	--	--			
64	4	-0.18	--	0.72	--	--	--	--	--	--			
105	1	1.58	--	--	--	0.797	--	--	--	--			
110	3	0.64	--	--	--	0.756	--	--	--	--			
134	4	-0.09	--	--	--	0.724	--	--	--	--			
138	4	0.43	--	--	--	0.747	--	--	--	--			
180	3	-0.55	--	--	--	0.704	--	--	--	--			
190	4	0.27	--	--	--	0.74	--	--	--	--			
193	2	-1.10	--	--	--	--	--	0.68	--	--			
247	0	-2.24	--	--	--	0.63	--	--	--	--			
265	2	-1.10	--	--	--	0.68	--	--	--	--			
273	2	1.07	--	--	--	0.775	--	--	--	--			
274	1	1.87	--	--	--	--	--	--	--	0.81			
279	4	-0.18	0.72	--	--	--	--	--	--	--			
301	4	-0.02	--	0.727	--	--	--	--	--	--			
323	3	0.96	--	--	--	0.77	--	--	--	--			
326	4	-0.18	--	--	--	0.72	--	--	--	--			
328	3	0.96	--	--	--	0.77	--	--	--	--			
333	4	-0.18	--	--	--	0.72	--	--	--	--			
379	3	0.96	--	--	--	--	--	--	--	0.77			
383	3	-0.64	--	--	--	0.7	--	--	--	--			

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued



SUMMARY		Methods					Statistics	
		7	20	21	22	40	Method Codes	
n =		27	2	1	2	1	07 Ion chromatography	MPV = 15.2 mg/L
Minimum =		14	16	14.8	14.8	15.25	20 Titration: colorimetric	F-pseudosigma = 0.52
Maximum =		18.05	17.92		15.5		21 Titration: electrometric	Rating criterion = 0.76
Median =		15.2					22 Colorimetric	n = 33
F-pseudosigma =		0.57					40 Ion selective electrode	Uh = 15.5
								Lh = 14.8

Lab	Rating	Z-value	Method Codes				
			7	20	21	22	40
1	2	-1.04	14.41	--	--	--	--
5	4	0.30	15.43	--	--	--	--
8	4	0.26	15.4	--	--	--	--
23	4	0.13	15.3	--	--	--	--
25	4	0.00	15.2	--	--	--	--
33	0	3.75	18.05	--	--	--	--
45	4	0.26	15.4	--	--	--	--
46	3	-0.53	--	--	--	14.8	--
59	4	0.00	15.2	--	--	--	--
64	2	1.05	16	--	--	--	--
89	3	0.53	15.6	--	--	--	--
105	4	0.26	15.4	--	--	--	--
110	4	-0.39	14.9	--	--	--	--
113	4	0.00	15.2	--	--	--	--
134	4	-0.13	15.1	--	--	--	--
138	4	0.00	15.2	--	--	--	--
180	3	0.92	15.9	--	--	--	--
190	2	-1.05	14.4	--	--	--	--
208	3	-0.53	14.8	--	--	--	--
247	3	-0.92	14.5	--	--	--	--
265	1	-1.58	14	--	--	--	--
273	4	0.07	--	--	--	--	15.25
274	0	3.58	--	17.92	--	--	--
277	4	-0.26	15	--	--	--	--
301	2	-1.07	14.39	--	--	--	--
321	2	1.32	16.2	--	--	--	--
323	3	-0.92	14.5	--	--	--	--
326	3	-0.53	--	--	14.8	--	--
327	2	1.05	--	16	--	--	--
328	1	-1.58	14	--	--	--	--
333	4	0.00	15.2	--	--	--	--
379	4	0.39	--	--	--	15.5	--
383	4	0.39	15.5	--	--	--	--

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

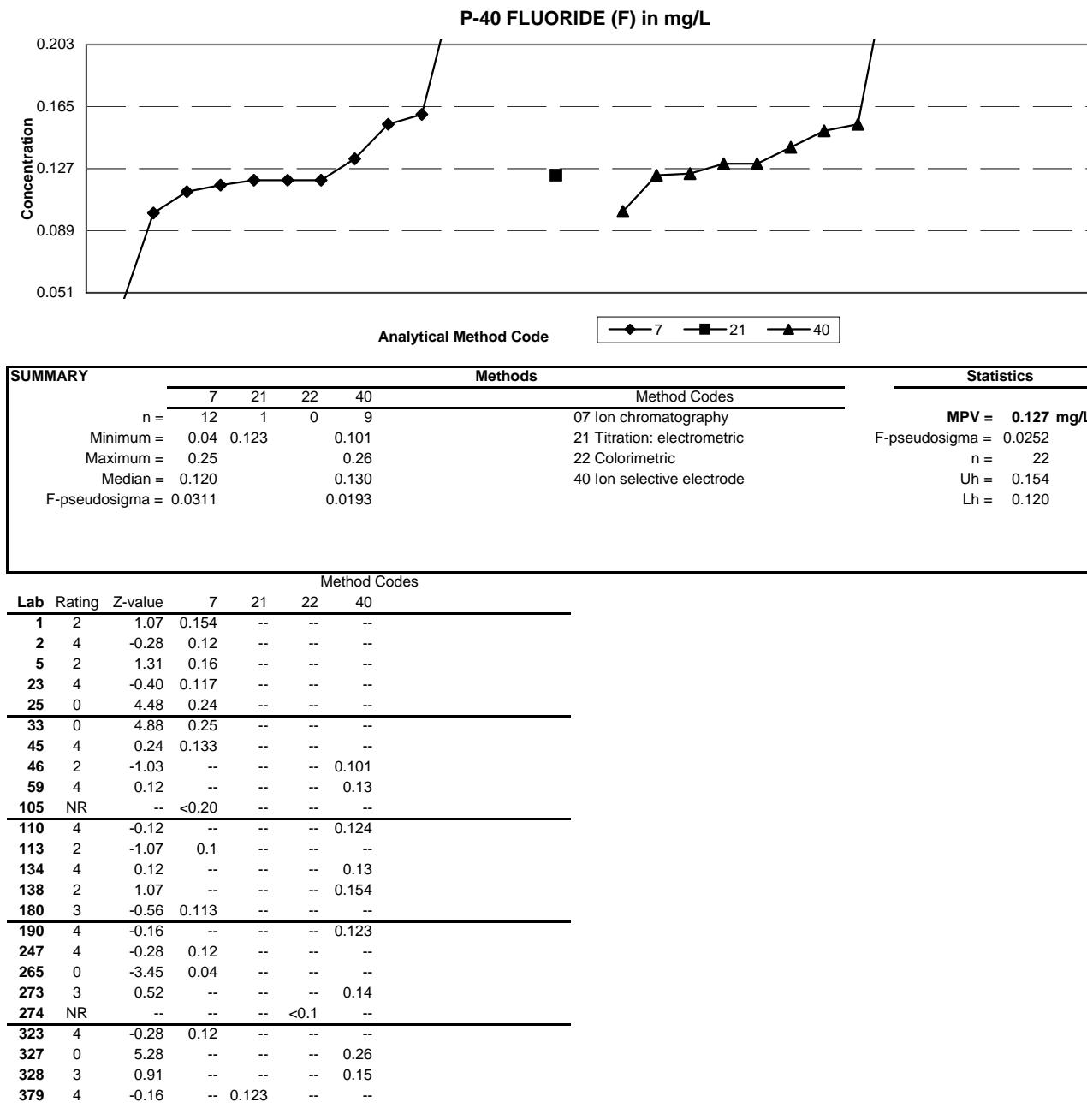
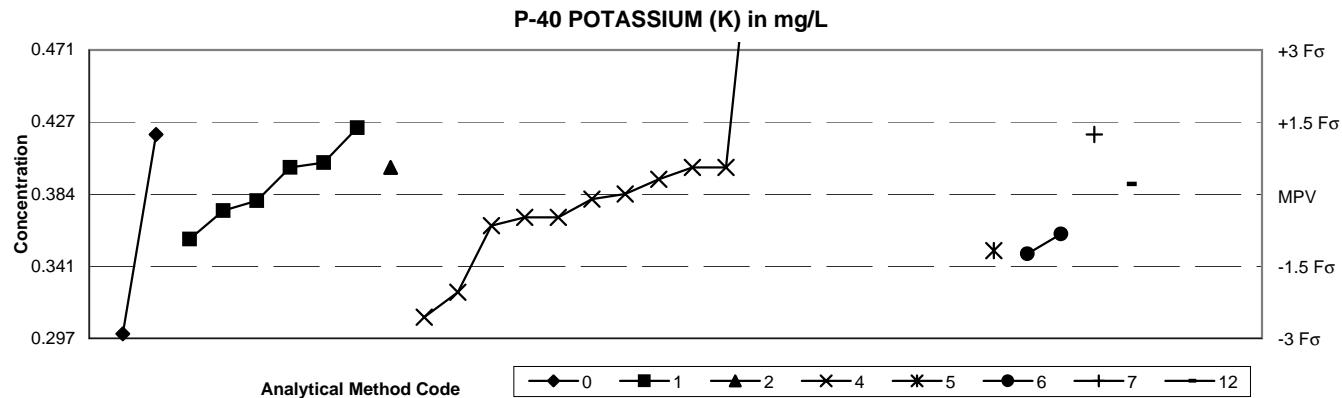


Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

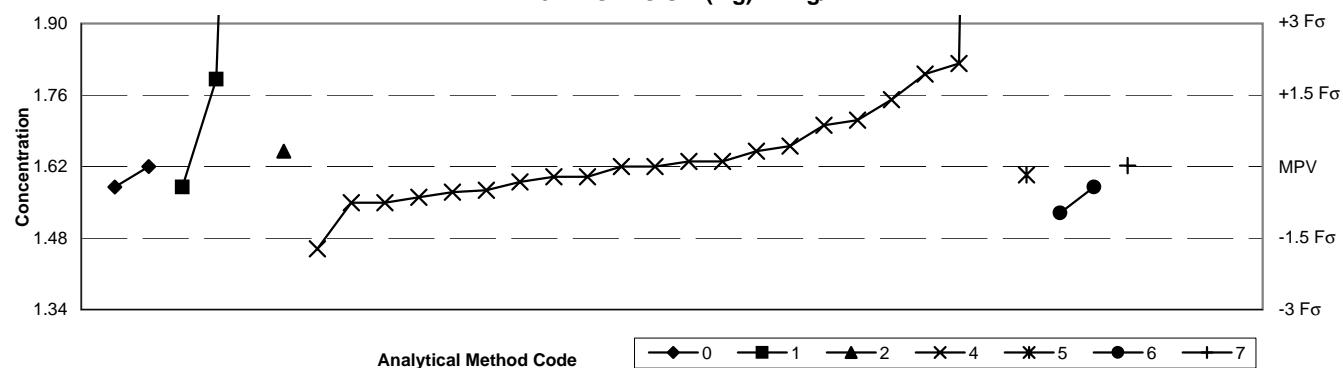


SUMMARY		Methods								Statistics	
		0	1	2	4	5	6	7	12	Method Codes	
n =		2	6	1	13	1	2	1	1	00 Other	MPV = 0.384 mg/L
Minimum =		0.3	0.357	0.4	0.31	0.35	0.348	0.42	0.39	01 Atomic absorption: direct, air	F-pseudosigma = 0.0289
Maximum =		0.42	0.424		1.49		0.36			02 Atomic absorption: direct, nitrous oxide	n = 27
Median =		0.390		0.384						04 Inductively coupled plasma	Uh = 0.402
F-pseudosigma =		0.0215		0.0222						05 Direct current plasma	Lh = 0.363
										06 Inductively coupled plasma / mass spectrometry	
										07 Ion chromatography	
										12 Flame emission	

Lab	Rating	Z-value	Method Codes							
			0	1	2	4	5	6	7	12
1	4	0.31	--	--	--	0.393	--	--	--	--
2	2	1.25	--	--	--	--	--	--	0.42	--
5	NR	--	--	--	--	<1.00	--	--	--	--
8	3	0.55	--	--	--	0.4	--	--	--	--
23	3	0.55	--	--	0.4	--	--	--	--	--
25	0	-2.04	--	--	--	0.325	--	--	--	--
33	2	-1.18	--	--	--	--	0.35	--	--	--
38	3	0.55	--	0.4	--	--	--	--	--	--
45	2	-1.25	--	--	--	--	--	0.348	--	--
46	3	0.66	--	0.403	--	--	--	--	--	--
64	4	-0.14	--	0.38	--	--	--	--	--	--
86	4	0.00	--	--	--	0.384	--	--	--	--
105	NR	--	--	--	--	<1.00	--	--	--	--
110	3	-0.93	--	0.357	--	--	--	--	--	--
134	4	-0.35	--	0.374	--	--	--	--	--	--
138	4	-0.10	--	--	--	0.381	--	--	--	--
180	NR	--	--	--	--	<0.45	--	--	--	--
190	0	7.13	--	--	--	0.59	--	--	--	--
193	3	-0.83	--	--	--	--	--	0.36	--	--
247	0	-2.56	--	--	--	0.31	--	--	--	--
265	4	-0.48	--	--	--	0.37	--	--	--	--
273	3	-0.66	--	--	--	0.365	--	--	--	--
274	4	0.21	--	--	--	--	--	--	--	0.39
277	2	1.38	--	0.424	--	--	--	--	--	--
279	0	-2.91	0.3	--	--	--	--	--	--	--
323	NR	--	--	--	--	<0.50	--	--	--	--
326	2	1.25	0.42	--	--	--	--	--	--	--
328	0	26.84	--	--	--	1.16	--	--	--	--
333	3	0.55	--	--	--	0.4	--	--	--	--
379	0	38.26	--	--	--	1.49	--	--	--	--
383	4	-0.48	--	--	--	0.37	--	--	--	--

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

P-40 MAGNESIUM (Mg) in mg/L

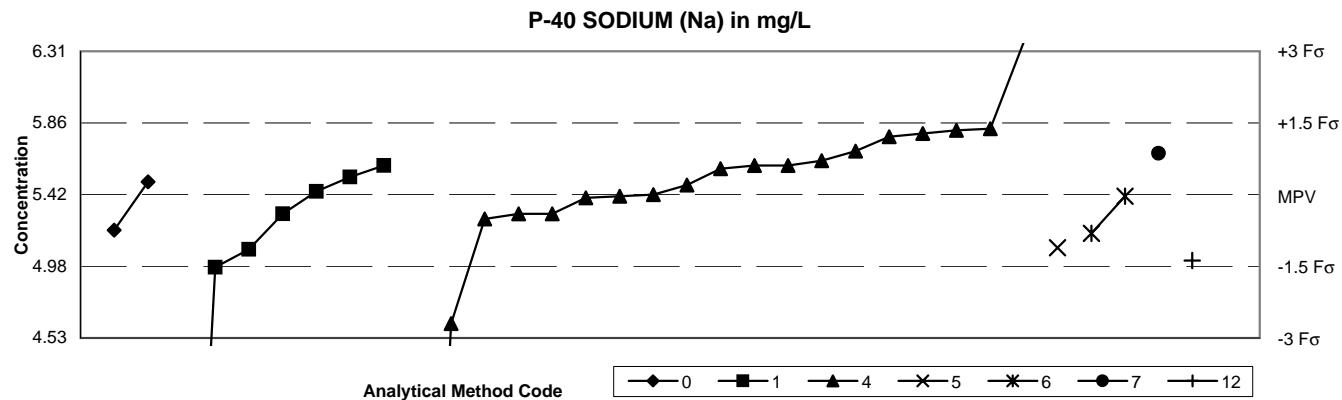


SUMMARY	Methods										Method Codes		Statistics	
	0	1	2	4	5	6	7	20	Other					
n =	2	3	1	21	1	2	1	1	00 Other			MPV =	1.62 mg/L	
Minimum =	1.58	1.58	1.65	1.46	1.604	1.53	1.622	1.94	01 Atomic absorption: direct, air			F-pseudosigma =	0.093	
Maximum =	1.62	3.578		5.39		1.58			02 Atomic absorption: direct, nitrous oxide			n =	32	
Median =				1.62					04 Inductively coupled plasma			Uh =	1.71	
F-pseudosigma =				0.093					05 Direct current plasma			Lh =	1.58	

Method Codes

Lab	Rating	Z-value	0	1	2	4	5	6	7	20
1	3	-0.65	--	--	--	1.56	--	--	--	--
2	4	0.02	--	--	--	--	--	--	1.622	--
5	3	-0.76	--	--	--	1.55	--	--	--	--
8	1	1.94	--	--	--	1.8	--	--	--	--
23	4	0.32	--	--	1.65	--	--	--	--	--
25	3	-0.54	--	--	--	1.57	--	--	--	--
33	4	-0.17	--	--	--	--	1.604	--	--	--
38	1	1.83	--	1.79	--	--	--	--	--	--
45	4	-0.43	--	--	--	--	--	1.58	--	--
46	3	-0.76	--	--	--	1.55	--	--	--	--
64	4	-0.43	--	1.58	--	--	--	--	--	--
86	4	0.32	--	--	--	1.65	--	--	--	--
105	2	1.40	--	--	--	1.75	--	--	--	--
110	4	-0.50	--	--	--	1.574	--	--	--	--
113	4	-0.22	--	--	--	1.6	--	--	--	--
134	4	0.00	--	--	--	1.62	--	--	--	--
138	4	0.43	--	--	--	1.66	--	--	--	--
180	4	-0.32	--	--	--	1.59	--	--	--	--
190	3	0.97	--	--	--	1.71	--	--	--	--
193	3	-0.97	--	--	--	--	1.53	--	--	--
247	1	-1.73	--	--	--	1.46	--	--	--	--
265	4	0.11	--	--	--	1.63	--	--	--	--
273	0	2.16	--	--	--	1.82	--	--	--	--
274	0	3.45	--	--	--	--	--	--	1.94	--
279	4	-0.43	1.58	--	--	--	--	--	--	--
301	0	21.13	--	3.578	--	--	--	--	--	--
323	4	0.00	--	--	--	1.62	--	--	--	--
326	4	0.00	1.62	--	--	--	--	--	--	--
328	3	0.86	--	--	--	1.7	--	--	--	--
333	4	0.11	--	--	--	1.63	--	--	--	--
379	0	40.69	--	--	--	5.39	--	--	--	--
383	4	-0.22	--	--	--	1.6	--	--	--	--

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued



SUMMARY		Methods							Statistics	
		0	1	4	5	6	7	12	Method Codes	
n =		2	7	19	1	2	1	1	00 Other	MPV = 5.42 mg/L
Minimum =		5.2	1.14	0.491	5.091	5.18	5.676	5.01	01 Atomic absorption: direct, air	F-pseudosigma = 0.297
Maximum =		5.5	5.6	6.37	--	5.41	--	--	04 Inductively coupled plasma	n = 33
Median =		--	--	5.30	5.58	--	--	--	05 Direct current plasma	Uh = 5.60
F-pseudosigma =		0.341	0.285	--	--	--	--	--	06 Inductively coupled plasma / mass spectrometry	Lh = 5.20
		--	--	--	--	--	--	--	07 Ion chromatography	
		--	--	--	--	--	--	--	12 Flame emission	

Lab	Rating	Z-value	Method Codes						
			0	1	4	5	6	7	12
1	4	-0.40	--	--	5.3	--	--	--	--
2	3	0.86	--	--	--	--	--	5.676	--
5	4	0.20	--	--	5.48	--	--	--	--
8	2	1.28	--	--	5.8	--	--	--	--
23	0	-14.43	--	1.14	--	--	--	--	--
25	3	0.91	--	--	5.69	--	--	--	--
33	2	-1.11	--	--	--	5.091	--	--	--
38	4	0.07	--	5.44	--	--	--	--	--
45	4	-0.03	--	--	--	--	5.41	--	--
46	4	-0.03	--	--	5.41	--	--	--	--
64	3	0.61	--	5.6	--	--	--	--	--
86	3	0.61	--	--	5.6	--	--	--	--
105	2	1.35	--	--	5.82	--	--	--	--
110	2	-1.15	--	5.08	--	--	--	--	--
113	4	-0.07	--	--	5.4	--	--	--	--
134	4	0.37	--	5.53	--	--	--	--	--
138	2	1.38	--	--	5.83	--	--	--	--
180	4	0.00	--	--	5.42	--	--	--	--
190	0	-2.70	--	--	4.62	--	--	--	--
193	3	-0.81	--	--	--	--	5.18	--	--
247	4	-0.51	--	--	5.27	--	--	--	--
265	4	-0.40	--	--	5.3	--	--	--	--
273	2	1.21	--	--	5.78	--	--	--	--
274	2	-1.38	--	--	--	--	--	--	5.01
277	4	-0.40	--	5.3	--	--	--	--	--
279	4	0.27	5.5	--	--	--	--	--	--
321	1	-1.52	--	4.97	--	--	--	--	--
323	3	0.54	--	--	5.58	--	--	--	--
326	3	-0.74	5.2	--	--	--	--	--	--
328	0	3.20	--	--	6.37	--	--	--	--
333	3	0.61	--	--	5.6	--	--	--	--
379	0	-16.62	--	--	0.491	--	--	--	--
383	3	0.71	--	--	5.63	--	--	--	--

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

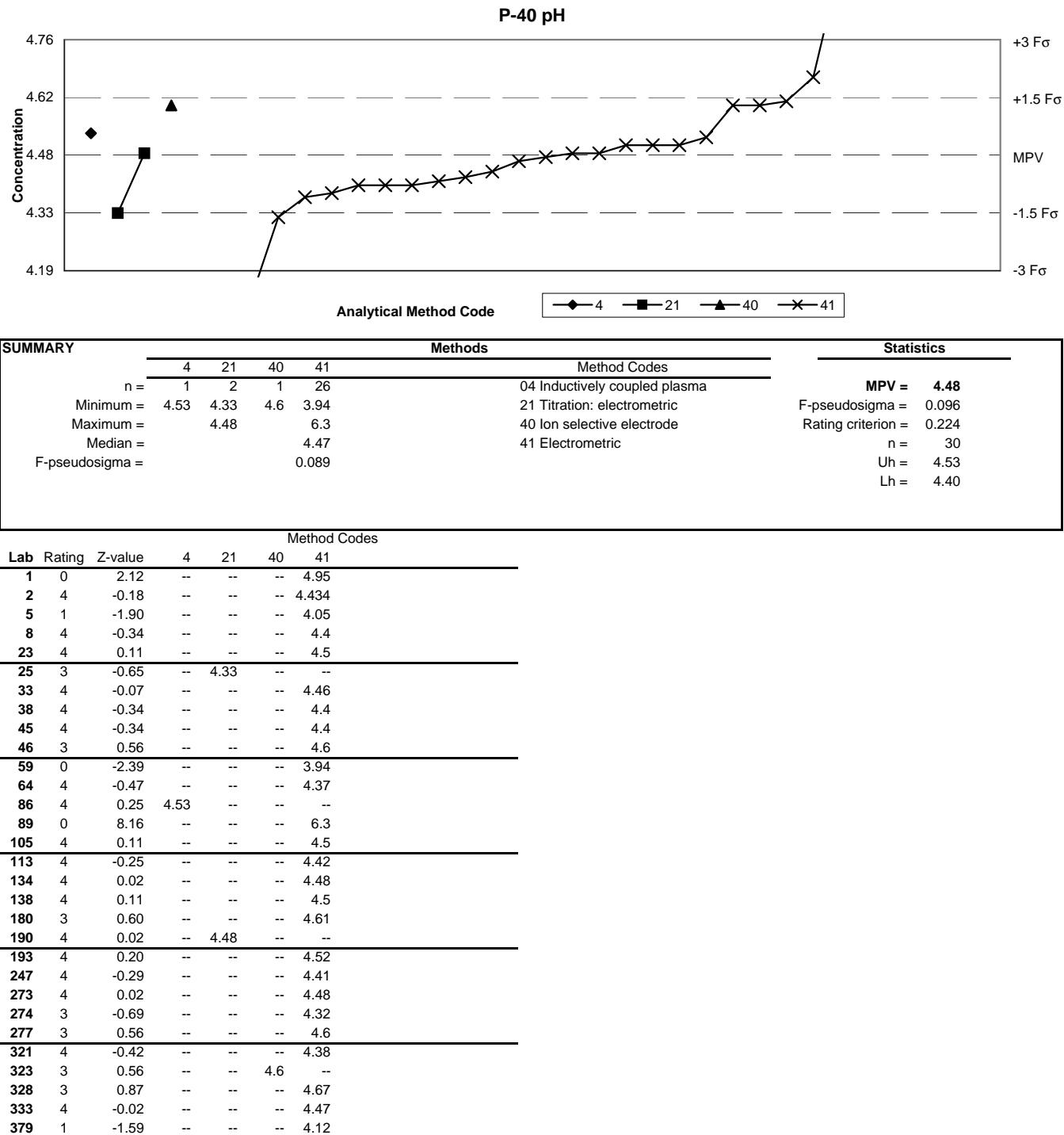
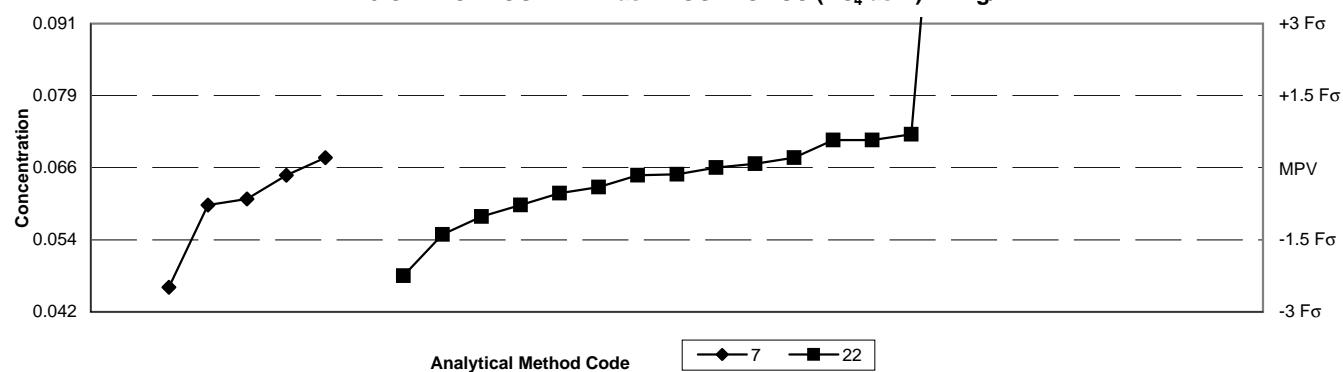


Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

P-40 ORTHOPHOSPHATE as PHOSPHORUS (PO_4 as P) in mg/L



SUMMARY			Methods			Statistics		
			0	7	22	Method Codes		
n =	1	5	19			00 Other	MPV =	0.066 mg/L
Minimum =	0.119	0.046	0.048			07 Ion chromatography	F-pseudosigma =	0.0082
Maximum =			0.068	0.613		22 Colorimetric	n =	25
Median =			0.061	0.067			Uh =	0.072
F-pseudosigma =			0.0037	0.0360			Lh =	0.061

Lab	Rating	Z-value	Method Codes		
			0	7	22
5	3	0.70	--	--	0.072
8	NR	--	--	<0.3	--
23	4	-0.40	--	--	0.063
25	2	-1.02	--	--	0.058
33	0	11.49	--	--	0.16
38	4	-0.16	--	--	0.065
45	4	-0.16	--	0.065	--
46	4	0.21	--	--	0.068
59	3	-0.65	--	0.061	--
64	0	17.01	--	--	0.205
89	4	-0.13	--	--	0.065
105	0	-2.24	--	--	0.048
113	4	0.09	--	--	0.067
134	3	-0.53	--	--	0.062
138	4	0.00	--	--	0.066
180	3	-0.77	--	--	0.06
190	2	-1.39	--	--	0.055
247	3	-0.77	--	0.06	--
273	0	67.05	--	--	0.613
274	0	21.30	--	--	0.24
301	0	6.46	0.119	--	--
321	3	0.58	--	--	0.071
323	3	0.58	--	--	0.071
328	0	10.26	--	--	0.15
333	4	0.21	--	0.068	--
379	0	-2.49	--	0.046	--

Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

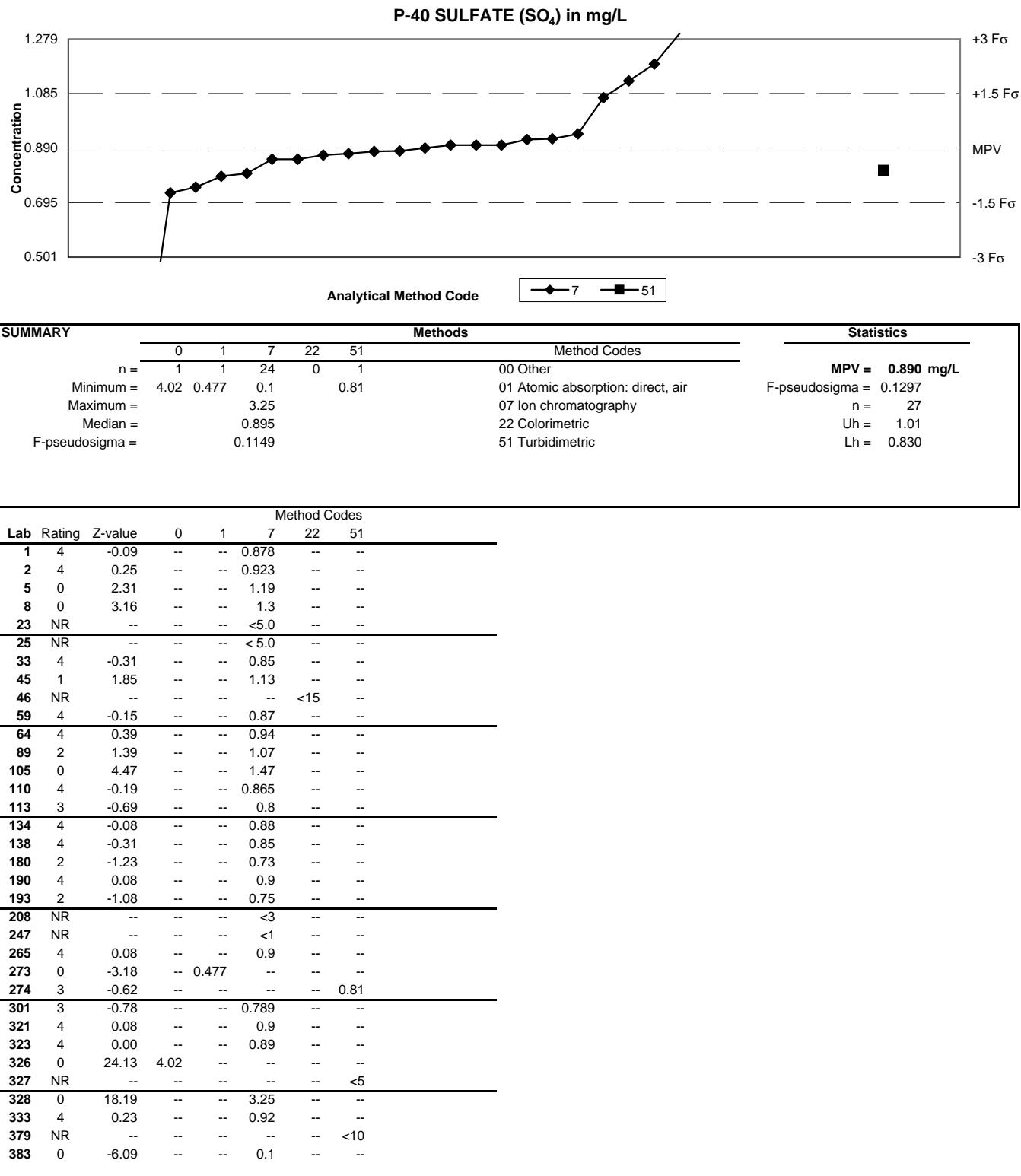
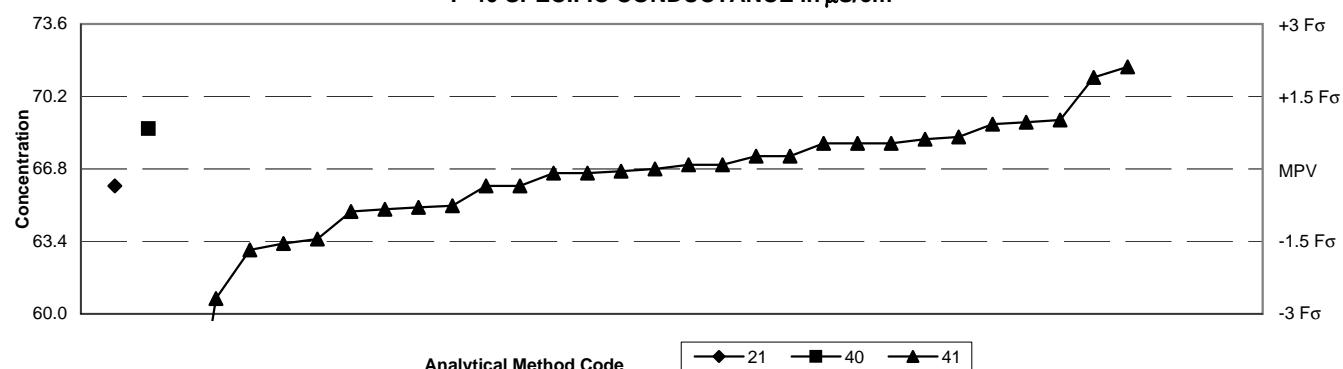


Table 15. Statistical summary of reported data for standard reference sample P-40 (low ionic-strength constituents)
-- continued

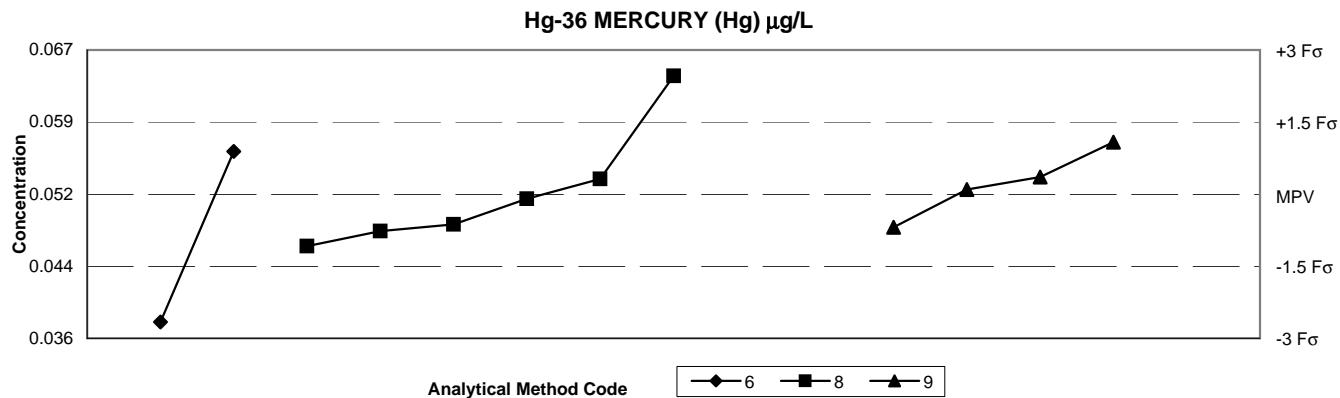
P-40 SPECIFIC CONDUCTANCE in $\mu\text{S}/\text{cm}$



SUMMARY			Methods			Statistics		
			Method Codes					
			21	40	41	21	40	41
n =	1	1	29					
Minimum =	66	68.7	50.8	21 Titration: electrometric			MPV =	66.8 $\mu\text{S}/\text{cm}$
Maximum =			71.6	40 Ion selective electrode			F-pseudosigma =	2.27
Median =			66.8	41 Electrometric			Rating criterion =	3.34
F-pseudosigma =			2.22				n =	31
							Uh =	68.1
							Lh =	65.0

Lab	Rating	Z-value	Method Codes		
			21	40	41
1	4	0.00	--	--	66.8
2	3	-0.99	--	--	63.5
5	3	-0.54	--	--	65
8	4	-0.24	--	--	66
23	2	1.44	--	--	71.6
33	3	-0.52	--	--	65.07
38	4	-0.06	--	--	66.6
45	3	-0.60	--	--	64.8
46	4	0.45	--	--	68.3
59	4	-0.03	--	--	66.7
64	3	0.69	--	--	69.1
86	4	-0.24	--	--	66
89	0	-4.79	--	--	50.8
105	4	0.06	--	--	67
110	2	-1.05	--	--	63.3
113	4	0.18	--	--	67.4
134	4	0.36	--	--	68
138	4	0.18	--	--	67.4
180	2	-1.14	--	--	63
190	4	-0.24	66	--	--
193	3	0.63	--	--	68.9
247	4	0.36	--	--	68
273	4	0.36	--	--	68
274	3	-0.57	--	--	64.9
277	1	-1.83	--	--	60.7
321	4	-0.06	--	--	66.6
323	4	0.06	--	--	67
327	2	1.29	--	--	71.1
328	3	0.66	--	--	69
333	4	0.42	--	--	68.2
379	3	0.57	--	68.7	--

Table 16. Statistical summary of reported data for standard reference sample HG-36 (mercury)



SUMMARY			Methods			Statistics		
			Method Codes					
			6	8	9	06 Inductively coupled plasma / mass spectrometry	08 Atomic absorption: cold vapor	09 Atomic fluorescence
n =	2	6	4					
Minimum =	0.038	0.046	0.048					
Maximum =	0.056	0.064	0.057					
Median =		0.050						
F-pseudosigma =		0.0041						
						MPV = 0.052 µg/L		
						F-pseudosigma = 0.0051		
						n = 12		
						Uh = 0.055		
						Lh = 0.048		

Lab	Rating	Z-value	Method Codes		
			6	8	9
1	3	-0.63	--	0.048	--
18	2	-1.08	--	0.046	--
32	0	-2.66	0.038	--	--
45	3	0.89	0.056	--	--
46	4	0.10	--	--	0.052
59	4	0.35	--	--	0.053
105	NR	--	--	<0.2	--
138	4	-0.10	--	0.051	--
180	0	2.46	--	0.064	--
235	3	-0.77	--	0.048	--
245	2	1.08	--	--	0.057
247	NR	--	--	<0.2	--
304	3	-0.69	--	--	0.048
356	4	0.32	--	0.053	--

Table 17. Most probable values for constituents and properties in standard reference samples distributed in March 2003

[MPV, most probable value; N, number of samples; µg/L, microgram per liter; mg/L, milligram per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; () rating criterion.]

T-173

Analyte =	Silver (Ag)	Aluminum (Al)	Arsenic (As)	Boron (B)	Barium (Ba)
MPV =	1.14 µg/L	71.0 µg/L	2.67 µg/L	158 µg/L	42.2 µg/L
F-pseudosigma =	0.104	5.34	0.267	11.8	1.95 (2.11)
n =	34	45	42	31	48
Analyte =	Beryllium (Be)	Calcium (Ca)	Cadmium (Cd)	Cobalt (Co)	Chromium (Cr)
MPV =	2.00 µg/L	34.8 mg/L	1.26 µg/L	1.26 µg/L	4.88 µg/L
F-pseudosigma =	0.137	0.96 (1.74)	0.082	0.104	0.330
n =	40	56	50	31	44
Analyte =	Copper (Cu)	Iron (Fe)	Potassium (K)	Lithium (Li)	Magnesium (Mg)
MPV =	7.50 µg/L	21.4 µg/L	3.85 mg/L	17.1 µg/L	9.38 mg/L
F-pseudosigma =	0.630	3.43	0.133 (0.192)	1.56	0.297 (0.469)
n =	47	39	53	26	56
Analyte =	Manganese (Mn)	Molybdenum (Mo)	Sodium (Na)	Nickel (Ni)	Lead (Pb)
MPV =	495 µg/L	7.22 µg/L	36.5 mg/L	5.38 µg/L	4.59 µg/L
F-pseudosigma =	24.7 (24.8)	0.434	0.96 (1.83)	0.445	0.385
n =	53	36	54	42	50
Analyte =	Antimony (Sb)	Selenium (Se)	Silica (SiO₂)	Strontium (Sr)	Thallium (Tl)
MPV =	5.20 µg/L	2.47 µg/L	11.1 mg/L	279 µg/L	5.94 µg/L
F-pseudosigma =	0.356	0.452	0.41 (0.56)	8.2 (14.0)	0.326
n =	33	35	35	41	35
Analyte =	Uranium (U)	Vanadium (V)	Zinc (Zn)		
MPV =	1.92 µg/L	4.31 µg/L	348 µg/L		
F-pseudosigma =	0.087 (0.096)	0.245	19.3		
n =	18	32	54		

M-166

Analyte =	Alkalinity	Boron (B)	Calcium (Ca)	Chloride (Cl)	Fluoride (F)
MPV =	81.0 mg/L	150 µg/L	31.3 mg/L	36.4 mg/L	0.690 mg/L
F-pseudosigma =	2.74 (4.05)	7.0 (7.5)	1.26 (1.57)	1.33 (1.82)	0.0597
n =	63	32	63	73	51
Analyte =	Potassium (K)	Magnesium (Mg)	Sodium (Na)	pH	Residue on Evaporation
MPV =	4.37 mg/L	18.5 mg/L	25.1 mg/L	9.50	260 mg/L
F-pseudosigma =	0.185 (0.219)	0.67 (0.93)	1.04 (1.26)	0.185 (0.475)	14.8
n =	59	62	61	63	47
Analyte =	Silica (SiO₂)	Sulfate (SO₄)	Specific Conductance	Strontium (Sr)	Total Phosphorus as P
MPV =	11.7 mg/L	56.2 mg/L	432 µS/cm	249 µg/L	0.056 mg/L
F-pseudosigma =	0.52 (0.59)	2.05 (2.81)	11.1 (21.6)	7.4 (12.5)	0.0089
n =	45	68	65	36	42
Analyte =	Vanadium (V)				
MPV =	17.2 µg/L				
F-pseudosigma =	1.04				
n =	30				

Table 17. Most probable values for constituents and properties in standard reference samples distributed in March 2003 -- continued

[MPV, most probable value; N, number of samples; µg/L, microgram per liter; mg/L, milligram per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; () rating criterion.]

N-77	Analyte = Ammonia as N (NH ₃ -N)	Ammonia + Organic N as N	Nitrate as N (NO ₃ -N)	Total Phosphorus as P	Orthophosphate as P (PO ₄ -P)
	MPV = 0.073 mg/L	0.105 mg/L	0.067 mg/L	0.065 mg/L	0.060 mg/L
	F-pseudosigma = 0.0074	0.0419	0.0059	0.0048	0.0038
	n = 58	39	57	52	52

N-78	Analyte = Ammonia as N (NH ₃ -N)	Ammonia + Organic N as N	Nitrate as N (NO ₃ -N)	Total Phosphorus as P	Orthophosphate as P (PO ₄ -P)
	MPV = 0.789 mg/L	0.939 mg/L	0.660 mg/L	0.640 mg/L	0.632 mg/L
	F-pseudosigma = 0.0456	0.1038	0.0310 (0.0330)	0.0267 (0.0320)	0.0200 (0.0316)
	n = 55	41	40	50	50

P-40	Analyte = Acidity	Calcium (Ca)	Chloride (Cl)	Fluoride (F)	Potassium (K)
	MPV = inadequate data	0.728 mg/L	15.2 mg/L	0.127 mg/L	0.384 mg/L
	F-pseudosigma =	0.0437	0.52 (0.76)	0.0252	0.0289
	n =	30	33	22	27

	Analyte = Magnesium (Mg)	Sodium (Na)	pH	Orthophosphate as P (PO ₄ -P)	Sulfate (SO ₄)
	MPV = 1.62 mg/L	5.42 mg/L	4.48	0.066 mg/L	0.890 mg/L
	F-pseudosigma = 0.093	0.297	0.096 (0.224)	0.0082	0.1297
	n = 32	33	30	25	27

	Analyte = Specific Conductance				
	MPV = 66.8 µS/cm				
	F-pseudosigma = 2.27 (3.34)				
	n = 31				

HG-36	Analyte = Mercury (Hg)				
	MPV = 0.052 µg/L				
	F-pseudosigma = 0.0051				
	n = 12				